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The Housing Industry:
Perspective and Prospective

Working Paper Five
The Housing Industry in the Future

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The Housing Industry:
Perspective and Prospective

Working Paper Five
The Housing Industry in the Future

Prepared by Clayton Research Associates
and Scanada Consultants

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INTRODUCTION

Uncertainty is the nemesis of businesses, governments and individuals wanting to chart a future course of action to best meet their goals. While unequivocal certainty would simplify life, it is not possible; even if it were, it may not be desirable.

There is likely to be general agreement that an overabundance of uncertainty has existed in the housing marketplace in the past and that less uncertainty would be advantageous in the future. This working paper tries to alleviate some uncertainty about the future for housing market participants by providing some insights into the expected major trends and forces influencing the marketplace over the 1986–2001 period.

This working paper is based on the premise that major forces will influence both the demand and supply sides of the housing market to the end of the century and that it is possible to identify many of these forces and their implications. Using this knowledge, housing market participants can make more informed and lasting decisions.

Relying too heavily on a single scenario of the future prepared at one point in time has its dangers.[1] It is impossible to foretell the future with complete confidence. Moreover, forecasting is ongoing as the future holds no guarantees owing to the advent of unforeseen events.

SCOPE OF THE PAPER

This working paper examines the major factors shaping the single-family homebuilding and residential renovation sectors of the housing industry through the late 1980s and the 1990s. The ways in which construction technology and the structure of the industry are likely to respond to the changing environment are explored.

When approaching a nebulous topic such as the future of housing, with special reference to the housing industry, a decision had to be made about the manner and extent of the study's coverage. A decision was made to concentrate available resources on the single-family homebuilding and renovation sectors of the housing industry at the national level, focusing on two aspects of change in these sectors — technological change and structural change.[2]

STRUCTURE OF THE PAPER

The remainder of this working paper comprises five chapters:

- Chapter One examines the future external environment in which the housing market is expected to operate;
- Chapter Two explores the implications of this external environment for the housing market;
- Chapter Three considers the implications of the changing marketplace for single-family housing production;
- Chapter Four considers the implications of the changing marketplace for the structure of the housing industry; and
- Chapter Five presents the conclusions.

Notes referenced in each chapter are consolidated at the end of the main text.

CHAPTER ONE
THE CHANGING EXTERNAL ENVIRONMENT

The housing industry is greatly influenced by its external environment. This chapter reviews available forecasts of future trends in the Canadian economy and society. Based on this review, a scenario is formulated of the market environment in which the housing industry is expected to operate over the remaining years of the twentieth century. As the emphasis is on identifying major trends and patterns rather than forecasting exact numbers, the impacts of the Canada-U.S. free trade agreement are not explicitly considered. The implications of the identified trends for the housing market over the 1986–2001 period are discussed in Chapter Two.

THE ECONOMIC ENVIRONMENT

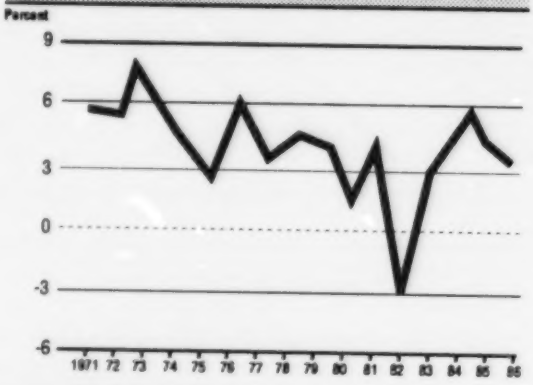
The performance of the overall economy has important repercussions on the housing industry. The number, types and characteristics of housing units in demand are influenced by the affordability of housing. In turn, affordability is a function of consumer income and interest rates, which in turn are related to the performance of the Canadian economy and the rate of inflation, respectively. The costs of building construction are, in turn, related to material and labour market patterns and conditions.

This economic overview is based on a volume published by the Royal Commission on the Economic Union and Development Prospects for Canada, which presents several longer-term projections prepared in late 1983 and several more recent economic projections.[1]

A Period of Moderate Economic Growth

Growth of the Canadian economy progressively declined during the 1971–86 period, as illustrated in Figure 1. Average annual real growth in gross domestic product declined from a vibrant 5.4 percent in the first half of the 1970s to 3.5 percent in the latter part of the decade to 2.5 percent in the recession-wracked first half of the 1980s. Personal income experienced a progressive diminution in growth as well. However, owing to growing transfer payments from government, personal income increased at a slightly higher rate than overall economic growth.[2] After tax, personal income increased at an equivalent rate for the period, indicating that direct taxes, primarily the income tax, did not increase significantly as a share of income. However, a gap emerged in the mid-1980s as the federal and several provincial governments imposed higher rates of income taxation.

FIGURE 1. ANNUAL CHANGE IN REAL GROSS DOMESTIC PRODUCT CANADA, 1971–86



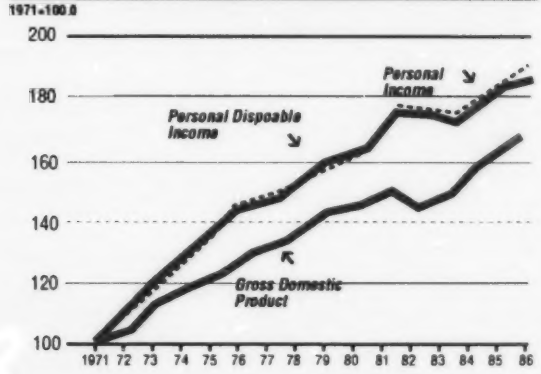
Source: Clayton Research Associates based on data from Statistics Canada.
Note: The effect of inflation has been removed.

Future consensus is for the economy to experience average annual real growth in the 2.5 to 3.5 percent range over the 1986–2001 period. This would be equivalent to the average performance of the economy during the late 1970s and first half of the current decade, but would be substantially less than the growth achieved in the early 1970s. Most forecasters expect growth to average about 0.5 percent higher in the first 10 years of the period. The growths in personal income and personal disposable income are expected to experience comparable rates of increase.[3] (See Figure 2.)

Among the reasons for this fairly modest longer-term economic outlook are expectations of only moderate productivity growth, a continued deceleration in the rate of population growth and, by the mid-1990s, slower labour force growth combined with the prospect of only moderate economic growth in the United States.

The level of immigration is explicitly recognized by forecasters as a policy decision of the federal government. Projections of average annual immigration over the 1986–2001 period range from 100,000 to 150,000 persons, which compares to 98,600 persons in 1986.[4]

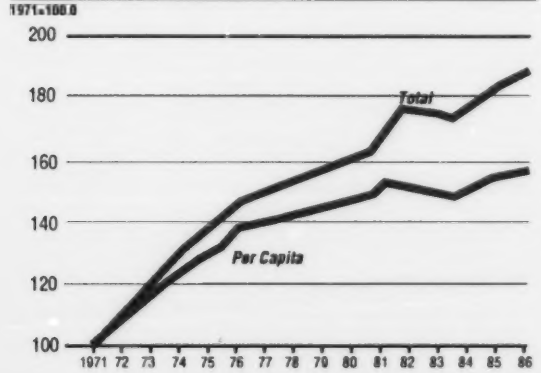
Figure 2. Growth in Real Gross Domestic Product, Real Personal Income, and Real Personal Disposable Income, Canada, 1971–86



Source: Clayton Research Associates based on data from Statistics Canada.

Undoubtedly, the economy will continue to be characterized by cyclical variation. While the timing and amplitude of future cycles cannot be predicted, alternating periods of expansion and contraction appear to be an innate part of economies, such as Canada's, that heavily rely on the private sector.

Figure 3. Growth in Total and Per Capita Real Personal Income Canada, 1971–86



Source: Clayton Research Associates based on data from Statistics Canada.

Per Capita Income to Continue to Lag Behind Total Income Growth

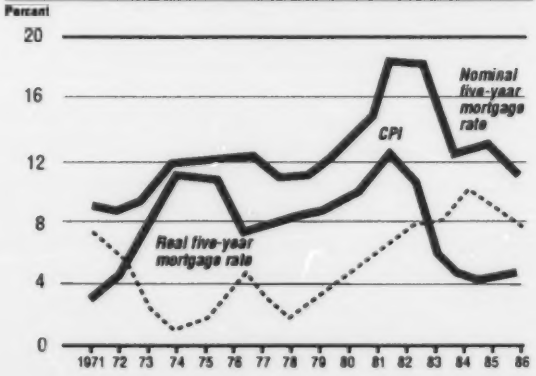
An examination of total income growth overstates the improved economic status of individual Canadians during the past 15 years since population also increased over the period. (See Figure 3.) The growth in per capita real personal income averaged 3.3 percent per year compared to 4.5 percent for total personal income.

Since the population is still expected to grow over the next 15 years, albeit at a decelerating rate, average real income per capita will continue to lag behind the rate of growth in total income.

No Significant Changes Expected in Nominal Mortgage Interest Rates

Real mortgage interest rates — the difference between nominal interest rates and the recorded inflation rate — have been volatile over the past 15 years.[5] Using the five-year term mortgage rate as the gauge, the real mortgage interest rate was high in the early 1970s. The difference between nominal mortgage rates and the rate of inflation subsequently narrowed sharply and virtually disappeared for a year or two. Near the end of the 1970s, a marked rise in interest rates, which peaked in 1981–1982, resulted in a large widening of the gap between interest rates and inflation that persisted to the mid-1980s despite a subsequent lowering of nominal interest rates. (See Figure 4.)

Figure 4. Average Monthly Mortgage Interest Rate and Year-to-year Percent Change in the Consumer Price Index, Canada, 1971–86



Source: Clayton Research Associates based on data from Statistics Canada and the Bank of Canada.

The level of real interest rates in Canada is the product of a number of forces, including expected inflation rates, supply and demand for funds, interest rates in other countries, notably the United States, and monetary policy. Most forecasters, not expecting a repeat of the double digit inflation rates of the mid-1970s and the early 1980s, agree that annual inflation will average four to six percent per year over the 1986 – 2001 period with the possibility of a slight acceleration through the 1990s. The reasons given for this optimistic scenario for inflation — and thus interest rates — include the belief that monetary authorities will not allow inflation rates to go above five or six percent, a gradual decline will occur in federal government deficits in both Canada and the United States and some narrowing of the gap between Canada and U.S. interest rates will occur.

With expectations of a reasonable rate of inflation and the possibility of some lowering in real interest rates, the five-year nominal mortgage interest rate should average in the 10 to 12 percent range over the next 15 years (periods of higher or lower rates could at times occur depending on underlying economic and financial conditions).

Labour Shortages Possible by the Late 1990s

The Canadian economy has been characterized by high unemployment for the past decade (Figure 5). While the unemployment rate is no longer in the double digit range, at 9.6 percent in 1986 it still remains high compared to historical norms. The reasons are complex and cannot be explored in detail here, but suffice to say that major factors have been the rise in the size of the labour force owing to the entry of baby boomers and the rapid increase in the participation rates of women.

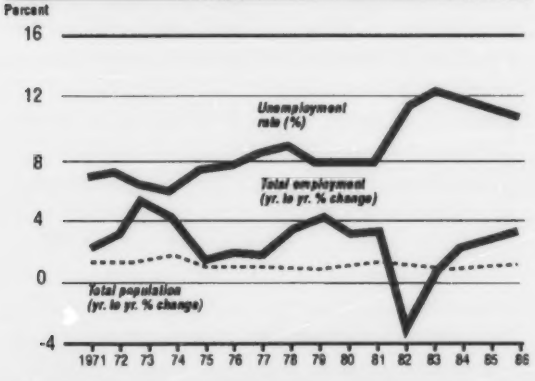
Most forecasters expect a gradual downward trend in the unemployment rate to the six to seven percent range by the end of the century. The decline reflects the combination of a slowdown in the growth of the labour force, a result of the aging of the baby boom generation, and a slowdown in the rise in female participation rates.

Since an unemployment rate of six to seven percent in the late 1990s will likely be close to full employment, labour shortages in particular skills or regions of the country could occur even before this time.[6]

No Excessive Pressure on Construction Real Wage Rates

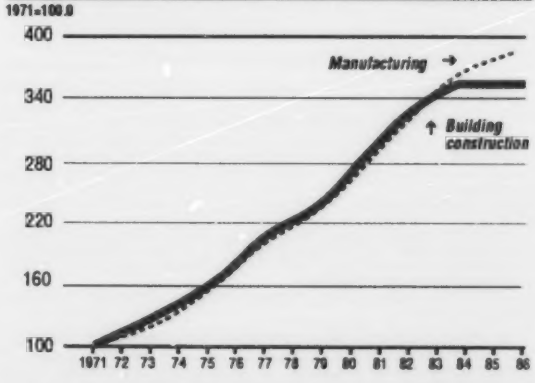
As shown in Figure 6, wage costs for on-site construction workers are a major cost for the housing industry. During the 1970s, the average hourly wage paid to building construction workers in Canada (separate data are not available for housing construction) increased marginally faster than for manufacturing workers. This situation reversed in the first half of the 1980s. In fact, the data indicate that average hourly earnings in construction remained static between 1983 and 1986. These data suggest there has not been any serious scarcity of construction workers over the past 15-year period.

FIGURE 5. UNEMPLOYMENT RATE AND ANNUAL EMPLOYMENT AND POPULATION GROWTH CANADA, 1971–86



Source: Clayton Research Associates based on data from Statistics Canada.

FIGURE 6. AVERAGE HOURLY EARNINGS IN BUILDING CONSTRUCTION AND MANUFACTURING CANADA, 1971–86



Source: Clayton Research Associates based on data from Statistics Canada.

Note: Includes both unionized and non-unionized workers. The published post-1982 data were adjusted for a revision in coverage.

These hourly wage rate data, reflecting actual wage payments to building construction workers, unionized or not, illustrate a different pattern from the popular perception of ever-rising construction wage rates. However, data on union hourly wage rates support this popular perception: The union basic average hourly wage rate for 16 construction trades in major centres climbed by 32 percent between 1981 and 1986.

The difference in the two data series reflects the extent of unionization (which varies by region), the workers covered by the two data series and the impact of unfavourable economic conditions on the actual hourly compensation.

Ontario Hydro has forecasted that future average hourly earnings of Ontario's construction workers will rise at the same rate as for manufacturing workers and that the rise in both will be higher than the inflation rate. Implicit in this projection is the assumption that there will not be any serious overall shortages in the number of construction workers during the 1986 –2001 period as a whole, though neither a shortage of particular trades is precluded nor is the possibility of an overall shortage emerging toward the end of the period.

THE DEMOGRAPHIC ENVIRONMENT

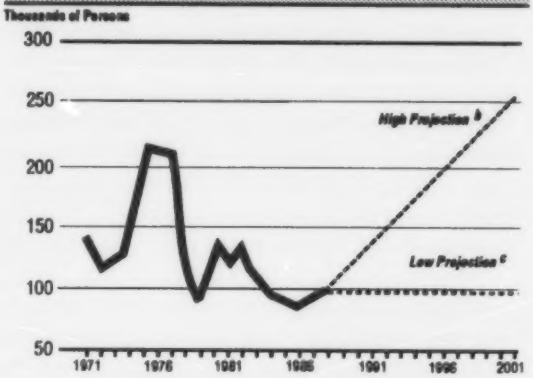
In general, the demographic future is easier to predict than the economic future. Many facets of the demographic outlook are fairly clear at this time (for example, death rates and aging of the baby boom generation).

The primary demographic unknowns are as follows: future immigration levels; and the population's willingness to form households. The former is largely under the control of the federal government (though the economic situation in Canada vis-à-vis other countries is important as well). The willingness to form households, particularly by young adults, closely relates to economic conditions, as shown by the experience of the early 1980s.

Future Level of Immigration Critical Element of Demographic Future

Immigration has been an important source of population growth for Canada. One of every six people living in Canada in 1981 was born outside Canada.[7] However, in recent years immigration volumes have been quite low. Immigration has totalled less than 100,000 persons annually during the 1983–86 period, though a moderate increase occurred in 1986 (to 98,600 persons) from less than 90,000 in each of the preceding three years. (See Figure 7.)

FIGURE 7. TOTAL IMMIGRATION CANADA, 1971-2001[a]



Source: Employment and Immigration Canada and projections by Clayton Research Associates.

[a] 12 months ending June 1 of the indicated years.

[b] Assumes immigration increases by 10,000 persons per year to 250,000 by 2001.

[c] Assumes immigration remains constant at 100,000 persons per year.

The level of immigration has been highly cyclical over the postwar period, with the number of immigrants in the 1983–85 period at the low point of a cycle that peaked in 1980 at 143,117 persons. These low numbers reflected federal policy, announced in November 1982, to reduce immigration levels when many Canadians were unemployed.[8]

Higher immigration levels appear likely in the future. In 1986, the federal government announced that moderate and controlled increases in immigration levels were desirable for Canada's social and economic growth.[9] Its immigration target was increased to between 115,000 and 125,000 persons in 1987, up from the target of between 85,000 and 90,000 persons two years earlier.

The extent of the increase in immigration over the 1986–2001 period cannot be predicted. Based on the assumptions that labour markets are expected to tighten as the 1990s progress and that the business community will likely become increasingly aware of the economic

benefits of higher levels of immigration, a significant rise in annual immigration levels is possible by the end of the century. Conversely, adverse public opinion to increased levels of immigration could possibly moderate increases.

For the demographic projections presented in this section, two alternative projections of annual immigration over the 1986–2001 period are made. The low projection assumes that immigration will be a constant 100,000 persons per year, a level equal to the average annual number of immigrants during the 1981–86 period. The high projection assumes that immigration progressively rises by 10,000 persons per year from 110,000 persons in the first year (1986–87) to 250,000 persons in the final year of the period.

The cumulative difference between the low and high assumptions is considerable. Under the low projection, the total number of immigrants over the 1986–2001 period would be 1.5 million persons, while under the high projection, the total number of immigrants would be 2.7 million persons (1.2 million persons more than under the low projection).

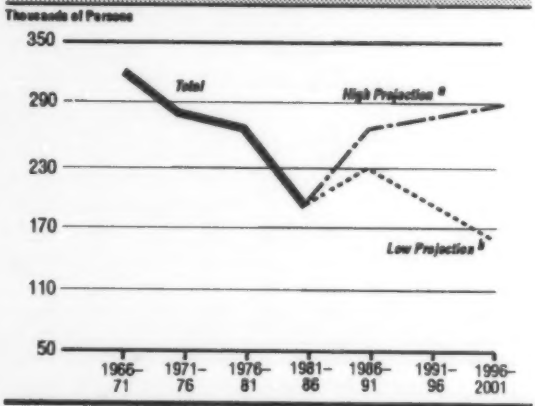
While the federal government exerts considerable control over the level of immigration, it does not control the number of Canadians emigrating to other countries. In fact, data on emigration levels are sparse and subject to considerable error.[10] For housing market analysis, the important variable is net immigration (the number of immigrants less the number of emigrants). For both projections made here, it is assumed a total of 50,000 persons emigrate from Canada annually.

A Modest Rise in Population Growth at Best

Canada's rate of population growth decelerated sharply over the 1966–86 period. As illustrated in Figure 8, average annual growth fell from 311,000 persons in the late 1960s (the postwar peak) to 193,000 persons in the first half of the 1980s. The decline in the 1970s mostly reflected the decline in the number of births compared to the 1960s; in the first half of the 1980s, lower net immigration was the major factor.[11]

Under the assumption of total annual immigration amounting to a constant 100,000 persons (net immigration of 50,000 persons), the trend to lower population growth is reversed in the late 1980s, but the longer-term trend to lower growth resumes and continues through the 1990s. Average annual population growth rises to 227,000 persons in 1986–91 but falls to just 145,000 persons by the late 1990s.

FIGURE 8. AVERAGE ANNUAL POPULATION GROWTH CANADA, 1966–2001



Source: Census of Canada and projections by Clayton Research Associates based on data from Statistics Canada.

[a] Assumes immigration increases by 10,000 persons per year to 250,000 by 2001.

[b] Assumes immigration remains constant at 100,000 persons per year.

Under the higher immigration assumption, average annual growth increases throughout the period, from 260,000 persons per year during the 1986–91 period to 297,000 persons annually during the 1996–2001 period.[12]

Both projections assume the total fertility rate (the average number of births per woman during child-bearing years) will remain low at 1.66 and a slight decline occurs in death rates for most age groups.

Aging of Population Will Continue

Shifts in the age composition of the country's population is as important, if not more so, to the housing market as is the level of overall population growth. Significant but predictable changes occur in the country's population age profile. Since the late 1960s, the three most noticeable trends have been as follows:

- The aging of the baby boom generation;[13]
- The aging of the baby bust generation;[14] and
- Continued growth in the number of elderly.

In the late 1970s, the 15 to 34 age cohorts of the population (the baby boom generation) experienced the most rapid growth. This group and the associated rapid growth, which moved to the 20 to 39 age cohort through the early 1980s, will move to the 35 to 54 age cohort by the end of the 1990s. (See Table 1.)

Table 1. Total Population by Age Group Canada, 1971–2001

Age Group	Actual				Projected[a]		
	1971	1976	1981	1986	1991	1996	2001
	Percentage Distribution						
Under 15	30	26	23	21	21	20	18
15–24	18	19	19	17	14	13	13
25–34	13	16	17	18	17	16	14
35–44	12	11	12	14	16	16	16
45–54	11	11	10	10	11	13	15
55–64	8	8	9	9	9	9	10
65 and over	8	9	10	11	12	13	14
Total	100	100	100	100	100	100	100

Source: Census of Canada and projections by Clayton Research Associates based on data from Statistics Canada.

[a] Based on constant annual total immigration of 100,000 persons and net immigration of 50,000 persons.

The aging baby boom generation is being followed by the baby bust generation. In the first half of the 1980s, the number of persons in their teens and early '20s actually declined. This population concavity will age such that by the end of the 1990s, the decline will be centred among those in the 25 to 34 age group.

The number of seniors (persons aged 65 years and over) will continue to grow through the 1990s; however, the growth will increasingly be centred in older seniors (those aged 75 years and over).

A Number of Other Demographic Trends Have Repercussions for Housing

While population growth and the age profile of the country's population are important demographic trends, other trends are influencing the demand for housing (either in total or its composition). These include: the incidence and timing of marriages; the incidence, ultimate number and timing of having children; the growth in common-law arrangements; the incidence and timing of separations and divorces; the rate at which young adults leave their parents' home to form their own households; and differing death rates among males and females.

These latter demographic trends are a result of the complex interaction of various economic, social and lifestyle forces. The presence and availability of affordable housing also can influence demographic trends.[15]

- More people are remaining single, but the vast majority will still marry.

A common perception is that a significant number of people are opting to remain single. While the number of marriages is no longer increasing (even when remarriages of divorced persons are included), much of this is a reflection of the decline in the number of persons in their early '20s.[16]

People are remaining single longer than was the case a decade ago. But the data suggest that by their mid-30s, the vast majority of Canadians are or have been married. In 1986, only 10 percent in the 35 to 39 age group were single, up only incrementally from eight percent a decade earlier. (See Table 2.)

Table 2. Proportion of Population That is Single by Age Group Canada, 1971–86, Percent

Age Group	1971	1976	1981	1986
15–19	95	95	96	97
20–24	56	56	62	70
25–29	21	22	26	33
30–34	11	11	13	16
35–39	9	8	8	10
40 and over	9	8	8	7

Source: Clayton Research Associates based on data from the Census of Canada.

Note: Single refers to never married persons; persons living in common-law arrangements are classified as married.

The number of people remaining single by their 35th birthday is likely to continue to increase slowly over the coming 15 years, but most Canadians will have married when they reach this age.

- More couples are living common-law.

The 1986 Census of Canada reports that the number of couples living together outside the bonds of formal marriage is increasing. In 1986, 8.3 percent of all couples (married and common-law) lived in common-law unions, up from 6.3 percent in 1981 (Table 3). The rapid growth in common-law families is reflected in the number of couples living common-law, which increased on average by 27,000 per year during the 1981–86 period. This is the same growth as for families where the couples were formally married.

Table 3. Couples Living in Common-law Unions Canada, 1981 and 1986

	1981	1986
Proportion of Husband-Wife Families Living Common-law[a] (%)	6.3	8.3
Average Annual Growth in the Number of Husband-Wife Families (000s)		1981–86
Presently married		27
Common-law		27
All husband-wife families		54

Source: Clayton Research Associates based on data from the Census of Canada.

[a] Husband-wife families include both presently married couples and common-law couples with and without children.

Available data indicate that common-law relationships are most prevalent among younger adults, especially under the age of 30 years.[17]

The number of couples living in common-law arrangements probably will continue to increase, though at a much slower rate than in the recent past. This deceleration will be largely the result of the decline in the number of persons in their '20s over the 1986–2001 period.

- More married women are remaining childless, but most are still having children.

Along with women marrying at a later age, married women who opt to have children are doing so later in life. However, the extent of this should not be exaggerated since nearly 85 percent of first births still occur when the mother is younger than 30 years old.[18] Of course, families tend to have fewer children than in the earlier postwar period.

The rise in the proportion of married women opting to have no children is perhaps more significant for the housing market than the delay in child-bearing or the decline in the average number of children per family.

During the 1970s, the number of childless married women in their early '30s rose significantly, albeit slightly. This trend probably continued into the early 1980s. However, the recent rise in the fertility rate in this age group suggests the proportion of married women remaining childless may be stabilizing. (See Table 4.)

Table 4. Incidence of Childlessness Among Younger Married Women Canada, 1961–81

Selected Age Groups	1961	1971	1981
20–24	26	42	54
25–29	14	21	30
30–34	n.a.	9	14

Source: A. Romaniuc, Fertility in Canada: From Baby-Boom to Baby-Bust, *Statistics Canada Catalogue 91-524E, 1984, p. 33.*

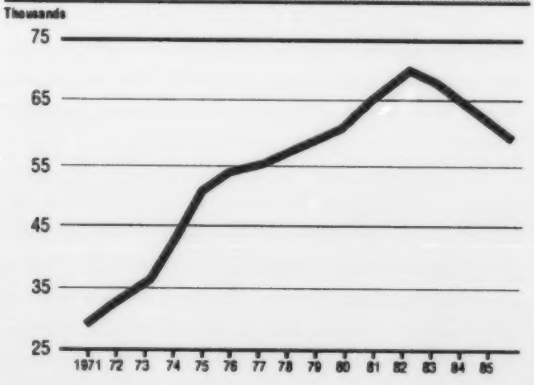
Note: Percent of all married women in selected age groups who are childless.

Therefore, it appears there will be more childless couples in the future, but the vast majority of couples will continue to have children.[19]

- Divorce rates will decline.

The 1970s and early 1980s were characterized by a rapid increase in divorces, both in absolute numbers and in relation to the total population. Changing social attitudes, as well as an easing in divorce laws, contributed to the increase. However, the number of divorces has declined slightly since 1982 (note the data in Figure 9 do not include separations). In part at least, this may be a product of the adverse economic conditions of the early 1980s.

Figure 9. Number of Divorces Canada, 1971–85



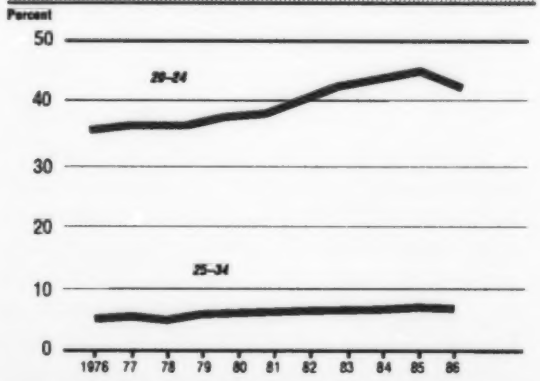
Source: Statistics Canada.

While the total number of divorces will unlikely continue to decline, the rapid rise characterizing the 1970s is not likely to be repeated over the 1986–2001 period.

■ More young adults remaining in the family home.

During the 1960s and early 1970s, increasing numbers of young adults established their own households (Figure 10). Growing affluence, the availability of a supply of reasonably affordable rental housing and a growing desire for independence were among the factors contributing to this trend. The trend reversed in the late 1970s when a minimal rise occurred in the proportion of young adults living with their parents.

FIGURE 10. PROPORTION OF POPULATION IN 20–24 AND 25–34 AGE GROUPS LIVING WITH PARENTS CANADA, 1976–86



Source: Clayton Research Associates based on data from Statistics Canada.

However, the proportion of young adults living at home, mainly those in the 20 to 24 age cohort, increased sharply with the 1982 recession — from 37 percent of the total in 1981 to 45 percent by 1985. This increase resulted from young adults moving back to their parents' homes or refraining from moving out.

While the trend reversed to some degree in 1986, the increase in the proportion of the population in the 20 to 24 age group, and possibly to a much smaller degree the 25 to 34 age group, who reside with their parents is undoubtedly permanent. Moreover, a gradual continuation in the reversal of the 1981–85 trend over the coming years will likely occur.

A Decline in Household Formation Expected

Household growth is a function of population growth, the age composition of the population and the willingness of the population to become household heads (termed the household headship rate).

With the exception of the 1986–91 period, the future growth trend in total population is at best only marginally positive for future household growth. However, any marginal stimulus arising from total population growth will be more than offset by the aging of the baby bust generation into their '20s, which is negative for household growth since the '20s traditionally have been the key household-forming age group. This trend will be offset only in part by the growth in the number of seniors, especially older seniors who have lost their spouse.

The largest unknown factor concerning future household growth has to do with future household headship rates — the willingness of the population to become household heads. Through the 1960s and 1970s, household headship rates generally increased in all adult age groups. Increasing per capita real incomes, changing social attitudes, which resulted in more young adults forming their own households, more separations and divorces and more seniors living on their own all contributed to a rapid growth in one-person households. (See Table 5.)

TABLE 5. HOUSEHOLD HEADSHIP RATES BY AGE GROUP CANADA, 1976–86

Age Group	1976	1981	1986
15–24	.130	.145	.128
25–34	.464	.483	.469
35–44	.516	.535	.541
45–54	.528	.549	.555
55–64	.561	.563	.570
65 and over	.589	.591	.601

Source: Clayton Research Associates based on data from the Census of Canada.

Note: Headship rates are calculated by dividing the number of persons in each age group who are household heads by the total number of persons in the age group.

In the first half of the 1980s, the upward trend in headship rates came to an abrupt end — in fact, they declined — for the segment of the population under the age of 35. Many younger adults reacted to the job losses and uncertainties caused by the 1981–82 recession by remaining at the family home or moving back home. The number of new households created by marriage breakup also may have declined in the first half of the 1980s (the number of divorces fell during the 1983–85 period). However, headship rates continued to rise for those aged 35 years or more.

To provide insight into the future, two alternative assumptions concerning headship rates are made. The first scenario assumes that the headship rate in each age group remains at its 1986 level through the 1986–2001 period; the second allows for modest increases in headship rates for most age groups over this period.[20]

Combined with the two scenarios of future immigration levels, the two headship rate scenarios produce a total of four household growth projections. All four projections (as noted in Table 6) contain two common trends: Average annual household growth is higher in the 1986–91 period than in the 1981–86 period; and average annual household growth declines through the 1990s. However, under the high immigration scenarios, the declines level off in the late 1990s.

Table 6. Average Annual Household Growth Canada, 1971–2001 (000s)

	Low Immigration Constant Headship Rates	High Immigration Constant Headship Rates	Low Immigration Rising Headship Rates	High Immigration Rising Headship Rates
Actual				
1971–76	---------- 225 ----------			
1976–81	---------- 223 ----------			
1981–86	---------- 142 ----------			
Projected				
1986–91	154	166	178	189
1991–96	128	161	144	177
1996–2001	108	161	125	179

Source: Census of Canada and projections by Clayton Research Associates.

Future Household Growth Sensitive to Household Headship Rate Changes

The four household growth scenarios illustrate the sensitivity of future household growth to changes in household headship rates and the immigration level. Even modest rises in headship rates can cause average household growth to increase by 20,000 to 30,000 households per year by the late 1990s.

Higher Immigration Would Cushion the Decline in Domestic Household Growth

A comparison of the household growth projections under low and high immigration with the constant headship rates scenario show the potential for higher immigration to counter the decline in household growth in Canada in the 1990s. Increasing immigration by 10,000 persons per year would result in a total of 490,000 additional households by 2001 compared to the situation where immigration remained constant at approximately the 1986 level.

However, the postulated rise in households owing to higher immigration will not be sufficient to counter entirely the decline in domestic household growth durin, the 1990s. For higher immigration to offset totally the decline in domestic household growth, average annual immigration would have to total between 300,000 and 350,000 persons per year during the decade, more than triple the 1986 figure, and 100,000 to 150,000 persons per year more than under the high projection.

Growth in Couples with Children at Home and Elderly Non-family Households

The changing age profile of the population suggests the aging of the baby boom and baby bust generations and a continued growth in the number of seniors will result in a changing household profile over the 1986–2001 period. (See Table 7.) The aging of the baby boom generation will lead to an increase in the relative importance of the traditional two-parent family with children at home during the early part of this period. The incidence of these households peaks in the 35 to 54 age cohorts. The contraction in the number of people in their '20s suggests some drop in younger one-person households (most non-family households consist of one person). Likely, this will be more than offset by the growth in the elderly, particularly those over the age of 75 years, which indicates that elderly one-person households will continue to grow in importance.

Some Shift to More Affluent Households

The aging of the baby boomer generation and the shift in the composition of newly-formed households away from younger households suggests an increase over the next 15 years in the number and proportion of households who have high incomes. The '40s and '50s are the peak earning years for most earners (Table 8).

Moreover, the proportion of high-income households in the 35 to 54 age cohorts has been increasing gradually with the rise in the number of two-income families. In

1986, 34.2 percent of households in the 45 to 54 age group were in the highest-income quintile, up from 29.5 percent in 1972; the comparable increase for households in the 35 to 44 age group was from 26.7 percent to 29.3 percent.[21]

TABLE 7. HOUSEHOLDS BY AGE OF HEAD AND HOUSEHOLD TYPE CANADA, 1986

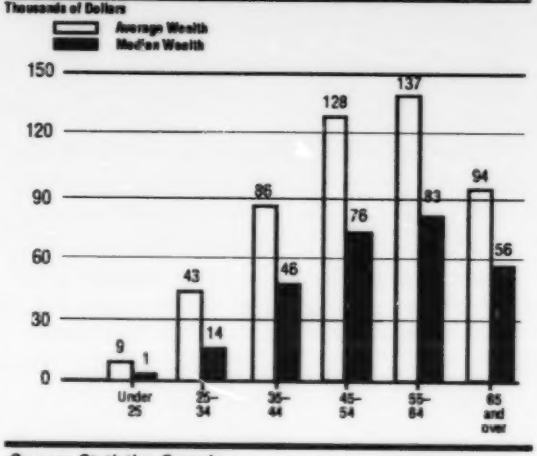
Household Type	Under 25	25–34	35–44	45–54	55–64	65–74	75 and Over
	Age of Household Head						
	Percentage Distribution						
Couples with children at home	15	46	64	55	29	10	3
Couples without children at home	29	24	14	15	36	40	33
Non-family	46	21	9	17	25	44	59
Single-parent and multi-family	10	9	13	13	10	6	5
Total	100	100	100	100	100	100	100

Source: Clayton Research Associates based on data from the Census of Canada.

While the coming years will see proportionally more high-income households, most households, even in the baby boom age groups, will not be affluent. As Table 8 illustrates, most will be middle- and moderate-income households.

With the aging of the baby boom generation, the number of households with substantial wealth will increase. Both average and median wealth holdings (total assets less total debts) rise sharply in the 35 to 54 age cohorts. However, the wide discrepancy between average and median wealth holdings indicates a small proportion of households in each age cohort have a large proportion of the assets. (See Figure 11.)

FIGURE 11. AVERAGE AND MEDIAN HOUSEHOLD WEALTH BY AGE OF HEAD, CANADA, 1984



Source: Statistics Canada.

Note: Wealth excludes pension rights.

CONSUMER PREFERENCES

Preference refers to human wants and desires. Economists presume that given their finite financial resources (income and wealth), consumers act rationally — the purchases of goods and services and the choices made between work, leisure, etc., are undertaken to maximize satisfaction.

TABLE 8. HOUSEHOLDS BY AGE OF HEAD AND INCOME CANADA, 1986

Income Group	Less Than 35 Years	35–44	45–54	55–64	65 Years and Over	All Households
	Age of Head					
	Percent Distribution					
Less than $25,000	42	26	26	43	73	42
$25,000–$34,999	22	18	16	17	12	18
$35,000–$44,999	17	19	17	13	15	15
$45,000–$54,999	10	15	14	14		10
$55,000 and over	9	22	27	16		15
Total	100	100	100	100	100	100

Source: Statistics Canada, Household Facilities by Income and Other Characteristics, *1986*

Note: Ages in May 1986 related to 1985 calendar year incomes.

Three facets to the preferences of Canadians have implications for the housing market for the remainder of the century. These facets are as follows:

- Housing preferences relating to the family life cycle

The family life cycle framework provides a basis for the systematic analysis of preferences based on age, marriage and the presence of children.[22]

- Housing preferences of the growing proportion of the population falling outside the confines of the traditional family life cycle framework

The traditional family life cycle framework excludes a number of groups, including lone-parent families, people choosing not to get married, people becoming single through divorce or separation, couples living common-law and couples opting not to have children. The housing preferences of these groups, which represent a growing segment of the population, should be considered in any examination of housing preferences. The family life cycle framework is affected also by delayed marriages, delayed child-bearing and the propensity to have fewer children per family.

- Housing preferences affected by lifestyle considerations

According to William Wilkie, lifestyles are moulded largely by three sets of factors: the way people are raised; people's personal interests and values; and the current demands of daily life.[23] Therefore, the family life cycle is one, but only one, element of lifestyle influence. Others include social class, race and ethnic subcultures. In recent years, another element — namely, information on what is transpiring in people's minds — has been considered in the analysis of lifestyles; this added dimension is referred to as psychographics.

In considering these types of preferences, it should be remembered that it is not preferences *per se* that interest the housing industry. Preferences are constrained by financial resources — income and wealth. Therefore, the housing industry is interested in what people want ***and*** are willing and able to pay for.[24]

The Family Life Cycle Framework Has Impressive Analytical Powers

The traditional family life cycle framework distinguishes among the following stages of life:[25]

- Young adults (late teens to late '20s)

The late teens and '20s are the ages when young people leave the educational system and enter the job market. They initially have comparatively low incomes since they are inexperienced and need training, but typically have only one person to support — themselves.

Depending on preferences and financial resources, young adults are faced with several housing options. They can remain with their parents, move into a rooming or boarding situation, move into their own dwelling unit, usually an apartment, or share a housing unit with one or more other people.

Over the past 25 years, most young adults typically have moved from their parents' home by their late '20s, setting up their own household in a rental apartment unit.

- Newly married (early '20s to early '30s)

Typically, young adults do not remain single for long, eventually getting married. For a period of time, both spouses continue to work.

The couple may choose to reside in one of the spouses' apartments or, more likely, move up to a larger, higher-quality apartment than either spouse lived in previously. After a few years of marriage, some buy a house in anticipation of having children. With both spouses working, they are able to save sufficient funds for a downpayment on a modest-priced home.

- Married with young children (mid-'20s to mid-'30s)

The arrival of a first child is the time most families buy their first home, usually modestly priced. Incomes often decline because the mother may drop out of the labour force or work part-time to take care of the baby. Another child or two may be born within a matter of years. Once settled in their home, families often undertake cosmetic improvements, such as painting and wallpapering.

- The move-up family (early '30s to early '40s)

Once the youngest child goes to school all day, the wife often returns to work full- or part-time. The family's finances improve, and the family frequently chooses to move into a larger, more expensive home in a better neighbourhood — often a new house. Typically, these families make a number of home improvements soon after moving in: finishing the basement, adding a deck or renovating the kitchen.

- The established family (mid-'40s to mid-'50s)

The family's finances continue to improve with career advancement. The children are now older teenagers who often are working part-time as well. The family has higher discretionary income and emphasizes quality when it purchases goods or services.

These families generally have a low rate of mobility and are satisfied living in the house they purchased a few years earlier — but they may undertake some expensive improvements.

- The empty nester (mid-'50s to mid-'60s)

Both spouses continue to work. Discretionary income is even higher since the children have left home, and ongoing expenses are low. Most of these couples now have their mortgage paid off.

These families also have a low rate of mobility and are content with their present home; they also may make expensive improvements, but probably not to the extent of established families.

- Active seniors (aged 65 and over)

The couple retires from work and thus experience a sharp drop in income. In the early years of retirement, both spouses enjoy reasonably good health.

Most of these couples remain in the family home, but some opt to move to a smaller home or even a rental apartment to gain access to the substantial equity they have built up in their home.

- The sole survivor

One spouse, usually the husband, dies. While the majority of the survivors remain in the family home, an increasing number sell it and move into a rental apartment. Older survivors have increasing health problems and needs and require a nursing home environment.

The traditional family life cycle is a successful framework for explaining the changing composition of new residential construction over time. The rapid growth in the number of young adults and newly married households in the 1960s was a primary cause of the acceleration in rental apartment construction in the 1960s and early 1970s. The growth in the number of married couples having their first child resulted in a surge in the number of first-time buyers entering the marketplace in the 1970s and a strong demand for modest- and middle-priced new single-family houses. In the 1980s, the rapid increase in the number of move-up families is a major factor behind the strong demand for higher-quality and large new single-family houses.

Expansion of Framework Improves Predictive Ability Only Somewhat

The proportion of the total population covered by the traditional family life cycle framework has been declining over the past decade or two, and will continue to decline in the foreseeable future. Incorporating the missing demographic groups into the framework results in an improvement of the predictive capability of the traditional framework, but not to the extent that might be expected. The reason for this is two-fold: A proportion of the missing groups, owing to limited financial resources, are not in the new housing market; and others in these groups do not behave much differently than the more traditional groups. These missing groups can be summarized as follows:

- Lone-parent families

The number of lone-parent families has increased rapidly over the past two decades. While these families still accounted for a fairly small percentage of all families (nine percent in 1986), they did account for fully one-third of the growth in family households in the first half of the 1980s.

The growth in the number of lone-parent families has not had a significant impact on the demand for new housing yet. Most have relatively low incomes and, therefore, do not have the financial resources to purchase a new home.

- Common-law couples and delayed marriages

The trend to delayed marriages and the growth in the number of couples living in common-law unions appear to go hand in hand. The impacts on the housing market from a common-law couple or the traditional newly married couple are quite similar, though the traditional newly married couple may be somewhat more willing to buy a home, in anticipation of having children, than the common-law couple.

- Delayed child-bearing and fewer children

The tendency for married women to have their first child later in life has modest housing market implications. With both spouses working longer before having children, couples tend to be better off financially. As a result, they are more likely to move into a higher-quality rental (or condominium) unit or to buy a higher-priced house than the traditional newly married couple.

Rather surprisingly, the trend to fewer children per family has not resulted in married couples with children or move-up families buying a smaller house than their counterparts of earlier times. This may be because the wife is now more likely to remain in the labour force and advance her career, which provides these families with a comparatively stronger financial base. Increased financial resources allow families the luxury of purchasing better housing.

- The childless couple

More couples are now opting to not have children, though the vast majority of married couples still do. These couples tend to have comparatively high incomes and choose high-quality housing. They now have a variety of housing options available to them, including luxury rental apartments and luxury condominium apartments, in addition to the more conventional single-family home.

Of the demographic groups not covered in the traditional family life cycle framework, this group has the largest potential impact on the new housing market. However, it should be noted that a high proportion of these couples still opt for a single-family home.

- Never married singles over the age of 30 and divorced and separated persons living alone

Persons in this group live alone and necessarily do not intend to change that situation. In general, they do not have the financial resources available to a two-income family; many have low or only modest incomes. Although some of these people have sufficient incomes to allow them to participate effectively in the market for new housing, they tend to live in older existing rental accommodation.

- Other groups

Other groups not included in the traditional family life cycle framework are unemployed young adults and special needs groups, such as persons with physical or mental disabilities or native persons. Many of these people have low or modest incomes and cannot compete effectively in the market for new housing without some financial assistance.

Increasing Focus on Lifestyle

Simply stated, lifestyle reflects the choice of activities or purchases that represent the way people wish to live and in keeping with their financial resources.[26] The traditional family life cycle framework is largely lifestyle-driven. Also, a young adult prefers a different living style than does an established family.

However, lifestyle preferences and decisions result from more than just the family life cycle. They reflect the way people are raised, their personal interests and values and the current demands of daily life. Moreover, they can change.[27] When superimposed on the traditional family life cycle framework and allowing for the growth of groups not covered in the traditional framework, lifestyle choices are causing an increasingly fragmented housing market.

OTHER ASPECTS OF THE EXTERNAL ENVIRONMENT

Other influences beyond the immediate confines of the housing marketplace are likely to influence the environment in which the housing industry operates up to the end of the century. These include the role played by government in the housing marketplace and the revolution in computers.

Governments Becoming More Supportive of Private Housing Industry

Governments are involved in the housing market in a number of ways, including the following:

- Assisting the enhancement of efficiency in the private housing market;
- Providing financial assistance to lower- and moderate-income households to enable them to obtain adequate, affordable housing;
- Regulating the industry for the public good (for example, health and fire safety);
- Supporting research and development of new products, ideas and processes and technology and the training of skilled labour; and
- Using the housing market to achieve stabilization goals, such as increased employment during a sluggish economy.

The balance among these various involvements depends on the nature of the current problems and the nature of political pressure for action. With the crest of the postwar requirement for new housing having passed and increased concern about government deficits and spending, the policy direction in recent years has shifted from providing social housing and regulating the industry to providing more support to the private housing industry through the enhancement of efficiency in the marketplace and encouraging more research, development and training. There is also an increasing awareness of the problems facing the residential renovation industry, as well as its growth potential.

The changes in direction introduced at the federal level during the mid-1980s included the following:[28]

Improving the efficiency of the housing market

- Promoting the availability of longer-term mortgages and access to high ratio mortgages

In late 1986, CMHC introduced the mortgage-backed security to try to encourage lenders to offer fixed rate longer-term mortgages (that is, mortgages with a term longer than five years). CMHC also reaffirmed its commitment to a publicly owned system of mortgage insurance covering all parts of the country, which is especially important to prospective house buyers who have adequate incomes to carry a mortgage but have accumulated only a limited downpayment.

- More targeting of housing assistance to the needy

Until recently, owing to the income-mixing provision of federal housing assistance programs, only about one-third of the social housing units built went to households in need; the remainder competed with housing that was or could have been provided by the private sector.[29] Under its latest initiatives, the federal government, through CMHC, is directing its housing assistance to needy households. Moreover, the federal government announced its intention to expand the rent supplement program to subsidize rents in private-market accommodation where an adequate supply is available.

- Providing financial support for a major study examining methods for streamlining the municipal regulatory process and reducing costs

CMHC has financed the efforts of a joint working group of the Canadian Home Builders' Association, the Federation of Canadian Municipalities and the Canadian Housing anf Renewal Association. The goal of this working group is to explore methods of reducing the costs of developing land and building homes while still ensuring public interests, such as health and safety, are protected.

- Exploring the feasibility of establishing a materials evaluation service

In association with CMHC, through its Institute for Research in Construction, the National Research Council was instructed to examine the feasibility of establishing a Canadian construction materials evaluation service. This service primarily would evaluate construction materials and products not covered by existing standards and that require careful assessment.

Research and training support

- Establishing a Housing Research Committee

The objective of the Housing Research Committee is to co-ordinate and establish priorities for federal, provincial and industry involvement in housing research and technological development.

- Funding builder and renovator workshops

CMHC has funded both builder and renovator workshops aimed at improving the quality of construction work.

- Funding housing research

CMHC provides funding for a wide range of housing research, from building technology to the housing needs of an aging society.

At the provincial level, the Government of Ontario has created the Building Industry Strategy Board, whose mandate is to develop and direct the implementation of a province-wide building strategy with the following goals: streamline building regulations; expand production for both export and domestic markets; improve industry productivity; increase co-operation and awareness within the industry; and promote the establishment of a world-class building centre.[30] The Province of Alberta assists through its Innovative Housing Grants Programs, intended to encourage and aid in housing research and development.

Government involvement in the housing market over the next 15 years is expected to continue the trends of the recent past. For the most part, actions will be implemented to enhancing the efficiency of the private marketplace since financial resources for major new subsidy programs will be limited.

Computer-based Technology Contains the Roots of Major Change

Computer-based technology is moving in several directions, which could ultimately result in major changes within the housing industry and its product.[31] These new directions are as follows:

- Office automation

With the advent of the microchip in the 1970s, the use of the computer in the office has exploded. Word processors and personal computers are used for a variety of purposes including accounting, payroll, inventory control, cost estimating, scheduling and business planning. This technology has the ability to improve administrative and management efficiency and profitability of builders, developers and renovators.

- Computer-based technologies

Computer-based technologies include computer-aided manufacturing (CAM) and computer-aided design (CAD), with current applications ranging from automated sewing machines to welding robots to computerized cash registers in retailing. These technologies have been introduced into the housing industry in both Japan and Sweden, and reliance on them is growing. They offer opportunity for both builders and renovators to respond to the increasingly fragmented needs of the market, to improve quality and to enhance efficiency.

- The microchip in the home

The microchip has the potential to enhance Canadian living standards through saving energy in home heating and improving the quality of products or services purchased.

The microchip can improve the quality of life in one's home in a wide range of ways. To the extent this technology is more readily adaptable to new housing than existing housing, its introduction would enhance the competitive position of the builders of new housing vis-à-vis resale housing.

SUMMARY

The economic environment is expected to be fairly positive for the housing market over the 1986–2001 period. The combination of moderate economic growth and

relatively low inflation likely will result in a gradual rise in per capita real incomes and mortgage interest rates at more or less the levels of the mid-1980s. However, irregular cyclical variations will continue undoubtedly. Finally, there is the possibility of shortages of specific construction trades as the 1990s progress and of an overall shortage toward the end of the decade.

On the whole, the demographic environment is expected to be rather negative for the housing market during the 1990s with a decline in household growth projected beginning in the last half of the 1980s. The magnitude of this decline will depend considerably on future immigration levels. The housing market will be influenced by three important trends in the age composition of the population over the 1986–2001 period: the aging of the baby boom generation; the aging of the baby bust generation; and continued growth in the proportion of the population in the elderly age groups. The proportion of more affluent households is expected to rise, but most households will continue to be in the middle- or lower-income ranges.

The combination of traditional housing preferences and the anticipated demographic shifts suggest a growing challenge for the builders of new housing as the baby boom generation ages beyond the traditional homebuying age groups, as well as increasing opportunities for renovators. Moreover, the demand for new housing likely will become increasingly fragmented owing to expanding lifestyle choices.

Governments are expected to be supportive of the private housing industry over the 1986–2001 period. Computer-based technologies will increasingly affect the operation and production processes of housing firms and provide the new homebuilder with a competitive advantage over the resale market.

CHAPTER TWO
IMPLICATIONS OF THE CHANGING EXTERNAL ENVIRONMENT FOR THE HOUSING MARKET

The external environment, including economic, demographic and lifestyle trends, as well as the role of government and the growth of computer-based technology, has a number of potentially significant consequences for the housing market.

DEMAND FOR NEW HOUSING

The total demand for new housing, its tenure mix and the characteristics of the new housing demanded during the 1986–2001 period will be influenced by the external enironment in which the housing market operates.

A Decline in Total Demand

Household growth is the main determinant of the demand for new housing, even though most newly formed households find accommmodation in the existing housing stock.[1] The remaining demand component, referred to as net replacement demand, relates to the replacement of existing units lost from fire, demolition, conversion to non-residential or less intensive residential uses and abandonment, less units created through the conversion of non-residential structures to residential use or the intensification of existing residential structures. Demand for new housing also includes the demand for mobile homes, though the quantity of mobile home shipments has been low in recent years (less than 5,000 per year).[2]

Available data on the size of the net replacement component of the total demand for new housing are unsatisfactory. Rough approximations based on fragmentary census and CMHC data suggest that net replacement demand averages about 14,500 units per year.[3] For purposes of these projections, the annual net replacement demand is assumed will average 16,500 units over the 1986–91 period, 18,000 units over the 1991–96 period and 19,500 units over the 1996–2001 period.

A range of demand scenarios are calculated by adding the projected net replacement demand to the household projections derived in the preceding chapter. The four household projections, based on a combination of the high and low assumptions for future immigration and household headship rates, include the demand for mobile homes, which is assumed to increase slightly over the 1986–2001 period — rising from an average of 5,000 units per year during the 1986–91 period to 8,000 units per year during the 1996–2001 period.

As illustrated in Table 9, while the level of future demand inherent in the four projections varies considerably, the projections share the following two characteristics:

- Average annual total demand for new housing rises during the 1986–91 period.

Under all four projections, the average annual demand for new housing, including mobile homes, is higher in the 1986–91 period than in 1981–86.

- Average annual total demand for new housing declines in the 1990s.

Again, with all four projections, the average annual demand for new housing is expected to decline through the 1990s from the level of demand during the 1986–91 period, though some leveling off occurs in the late 1990s under the high immigration scenarios.

TABLE 9. AVERAGE ANNUAL DEMAND FOR NEW HOUSING CANADA, 1981–2001 DWELLING UNITS (000s)[a]

	Low Immigration Constant Headship Rates	High Immigration Constant Headship Rates	Low Immigration Rising Headship Rates	High Immigration Rising Headship Rates
Actual[b]				
1981–86	----------	156.5	----------	
Projected				
1986–91	170.5	182.5	194.5	205.5
1991–96	146.0	179.0	162.0	195.0
1996–2001	127.5	180.5	144.5	198.5

Source: Census of Canada and projections by Clayton Research Associates.

[a] Includes mobile homes.

[b] Approximated by housing completions and estimated mobile home shipments.

The surge in new housing demand that characterized the postwar period through to the 1970s appears to be over. While a recovery in average annual demand is expected in the late 1980s compared to the first half of the decade, largely because demand in the first half was dampened by high interest rates and the recession, the long-term decline in demand is expected to resume in the first half of the 1990s.

A Continued Preference for Homeownership

Canadians over the postwar period have exhibited a strong preference for homeownership. Approximately 62 percent of all households in mid-1986 were owner-occupants (Table 10). However, the incidence of homeownership varies by household composition and age of household head. Not surprisingly, few young households are homeowners. The incidence of ownership peaks in the 45 to 64 age groups (three-quarters of these households were owners in 1986). The incidence of ownership declines for older households, but for those aged 65 or older who still maintain their own household, the majority remain homeowners.[4]

TABLE 10. PROPORTION OF HOUSEHOLDS WHO ARE HOMEOWNERS BY AGE OF HEAD AND TYPE OF HOUSEHOLD, CANADA, 1986

Household Characteristics	Percent Homeowners
Age of Head	
Under 25 years	17
25–34 years	49
35–44 years	70
45–54 years	76
55–64 years	75
65 and over	64
Household Type	
Couples with children at home	80
Couples without children at home	68
Non-family	35
Lone-parent and multi-family	50
All households	62

Source: Clayton Research Associates based on data from the 1981 Census of Canada.

With the baby boom generation centred in the age groups having the highest incidences of homeownership over the 1986–2001 period, the demand for new housing will continue to be focused on ownership forms of housing.

Reduced Demand from Traditional Buyer Groups in the 1990s

Traditionally, most purchasers of new homes have come from a fairly narrow segment of the population. Buyers have been couples with children or couples intent on having children, with the household head in the 25 to 44 age cohorts. Within the family life cycle framework, these are primarily families with young children, move-up families and a small number of newly married couples.[5] (See Table 11.)

The baby boom generation will move increasingly away from these types of households during the 1990s—first through the newly married category, then the category of married couples with young children category and, finally, the move-up family category. As a result, builders of new houses will find over time a shrinking market from these traditional buyer groups, though the magnitude of the decline will depend on future immigration levels.

A Growing Focus on "Lifestyle" Housing

In a sense, builders have always built "lifestyle" housing. Rental apartments conform with the lifestyles and financial resources of young adults and older singles. Inexpensive single-family homes are targeted at young families with children while larger, more expensive homes are targeted at the move-up family.

TABLE 11. CHARACTERISTICS OF OCCUPANTS OF NEWLY BUILT OWNER-OCCUPIED HOUSING[a] CANADA, 1981

Household Characteristics	Percent
Age of Head	
Under 25 years	5
25–34 years	43
35–44 years	26
45–54 years	13
55–64 years	8
65 and over	5
Total	100
Household Type	
Couples with children at home	63
Couples without children at home	23
Non-family	8
Lone-parent and multi-family	6
Total	100

Source: Clayton Research Associates based on data from the Census of Canada.

[a] Homes built in the 1976–mid–1981 period.

What is occurring, and is expected to occur increasingly, is the discovery by the housing industry that many needs and desires can be satisfied through appropriately designed housing beyond those satisfied by traditional housing forms, such as rental apartments, starter homes and move-up homes.

These needs and desires arise from changing ways of life (for example, more couples intent on remaining childless, more mothers working full-time and the recognition of the value of physical fitness). Canadian builders also have noticed the positive response of non-traditonal buyer groups, such as empty nesters and active seniors, to new forms, of housing and living environments offered in the United States.

The lifestyle revolution has already begun in a small way in Canada and, undoubtedly, will gain momentum in the coming years. Some examples provide illustration:

- The growing popularity of high-rise condominium living

In 1986, almost 86,000 homeowners across Canada lived in apartment structures with five or more stories. While representing only 1.5 percent of the stock of owner-occupied housing, high-rise condominiums are a growth sector of the new housing market. Two decades ago, there were no high-rise condominiums at all; between 1981 and 1986, demand averaged 5,000 units per year.

Many high-rise condominium projects built in the mid-1980s are self-contained villages that can be entered by invitation only. They have their own distinct boundary with peripheral fencing and a security gate at the entrance; they have their own open space and indoor and outdoor recreation and entertainment facilities; they hire their own maintenance staff; they are governed by a board of directors that has many of the same responsibilities as a village council. Residents have the opportunity to meet their neighbours when using the various facilities or at social events organized by the board. The purchase price is the entry fee into this village-like living environment, and the monthly maintenance fee is the village tax. One significant difference between a traditional village and the high-rise condominium is the latter is a vertical structure.

High-rise condominium living appeals to a range of buyers not traditionally in the mainstream of new homebuyers. A survey conducted in the early 1980s by Skaburskis & Associates (Table 12) found most high-rise condominium buyers have been empty nesters, active seniors or childless couples.[6]

Table 12. Characteristics of High-Rise Apartment Purchasers at Time of Purchase Seven Canadian Cities

Household Characteristics	Percent
Age of Head	
Under 30 years	7
30–39 years	14
40–49 years	18
50–64 years	44
65 and over	17
Total	100
Household Type	
Adults only aged 40–64	53
Adults only aged 65 and over	17
All other	30
Total	100

Source: A. Skaburskis and Associates, National Condominium Market Study, Working Paper 7, *CMHC, 1984, Tables 3.4 and 3.8B.*

High-rise apartment condominiums provide a living environment not previously available in the new housing market. The high-rise condominium is appealing because owners do not have responsibility for ongoing maintenance and upkeep. It also offers an attractive ownership environment that is secure, satisfies the need for less space and offers several desirable amenities.

- The emergence of the one-storey clustered housing village

Not all empty nesters, active seniors and childless couples who favour the condominium lifestyle want to live in a high-rise building. In the early 1980s, a small number of builders began to offer other choices to these buyers. Sifton Properties in London and Horizon Village Corporation in Edmonton are among the leaders. A study funded by Alberta Municipal Affairs provides insight into these housing concepts and the people who purchase them.[7]

The retirement village concept marketed by Horizon Village is a small community (ranging between 32 and 85 units) comprising single-level semi-detached and

row units planned for healthy, financially-independent older people, most of whom are retired. The village incorporates recreational/social facilities and provides for all outdoor maintenance. Each village is a separate condominium corporation.

As shown in Table 13, Horizon Village has appealed primarily to retired couples and individuals. Over one-half the occupants surveyed were over 65 years of age, and three-quarters were over the age of 60. Less than 10 percent of the occupants were under the age of 55 years at the time of the survey. Most occupants were in satisfactory or excellent health, and two-thirds were retired.

Table 13. Characteristics of Purchasers Horizon Village, Edmonton

Household Characteristics	Percent
Age of Occupant	
Less than 55 years	8
56–60 years	15
61–65 years	25
66–70 years	28
71–75 years	18
76 years and over	6
Total	100
Marital Status	
Married	67
Widowed	28
Divorced/separated	5
Total	100

Source: Lorraine Romank, Ownership Retirement Housing Projects in Alberta, *Alberta Municipal Affairs, 1987, p. A-11.*

The desire to avoid outside maintenance tasks was the reason most often given by buyers for moving from their previous homes. (See Table 14.) The desire to be with people of a similar age and health reasons were the two reasons most often given next. Other reasons were the previous home was too large and the home did not have a main floor laundry room.

Interestingly, only 12 percent of the buyers had considered a high-rise condominium before purchasing a unit from Horizon Village. Most had owned a single-detached home previously.

Table 14. Main Reasons for Moving from Previous Dwelling Purchasers of Horizon Village Homes, Edmonton

Reasons For Moving	Percentage of Respondents Answering
Too much outdoor maintenance	76
Wish to be with mature age group	40
Health	33
Previous home too large	26
No main floor laundry facilities	24
Home needed major repairs	22
Family encouraged the move	21

Source: Lorraine Romank, Ownership Retirement Housing Projects in Alberta, *Alberta Municipal Affairs, 1987, p. A-2.*

Note: Respondents could give multiple answers.

The success of the Horizon Village concept suggests that empty nesters and seniors can be attracted to a living environment containing features not found in conventional single-family subdivisions but are still low-rise in nature.

■ "Clustered for Leisure—the Changing Home"

Recent experience in the U.S. shows that even baby boomers are attracted by lifestyle housing:

> For many of the baby-boomers, aged 23 to 41, who now dominate America's housing market, the dream seems to be a maintenance-free resort-like environment dressed up in the mock-traditional style of post-modern architecture.[8]

Planned communities being built from San Diego to Boston hold a number of attractions for prospective baby boomer buyers. They reflect a penchant for bringing a semblance of resort living into everyday life. The gatehouse and extensive fencing reinforce the feeling of an insular, safe environment. There is a sense of community and neighbourliness. It is the 1980s version of segregation of people who want to live with their own kind. The housing is generally clustered in suburban locations.

The U.S. experience is showing that baby boomers increasingly want more than just an affordable home; they want a residential environment that adds to the enjoyment of life. This is not to say the majority of baby boom families with young children or the majority of

move-up buyers, even in the United States, will not continue to opt for a conventional single-detached home in a conventional subdivision. However, an increasingly important new market segment is emerging—that of the lifestyle living environment.

Traditional Single-family Housing Demand Negatively Affected by Demographics and the Growth of Lifestyle Housing

Based on the traditional profile of new single-family house buyers, the aging of the baby boom generation into the late '40s and '50s during the 1990s could prove negative for the builders of conventional single-family homes. Traditionally, most established families and empty nesters have remained in the single-family home they bought when they were in the move-up family stage of life.

The growth in lifestyle housing projects and communities targeted at empty nesters, active seniors and, possibly, established families, could prove extremely negative for the demand for conventional new single-family homes. Since most of these buyers will be selling their conventional single-family home before moving, the builders of new conventional single-family homes will face increasing competition from the resale market. The more successful lifestyle housing becomes, the greater the competition the conventional single-family homebuilder will face.

Growth in Congregate Forms of New Housing for the Elderly

Congregate forms of housing refer to accommodation for seniors that are not self-contained dwelling units and therefore are not counted as housing starts and completions by CMHC or as private households by the Census of Canada. Congregate housing for seniors can consist of a bed in a total care environment (for example, a nursing home or a geriatric hospital) or accommodation in a retirement home providing room, board and minimal care (that is less than 1.5 hours per day of nursing and personal assistance).

As shown in Table 15, the proportion of seniors living in congregate housing increases markedly with age. Three-quarters of the seniors living in these forms of housing in the mid-1980s were 75 years of age or older. The number of seniors aged 75 or over living in congregate housing increased by more than 5,000 persons per year in the first half of the 1980s, and this number is expected to grow through the 1990s.[9]

Table 15. Persons Aged 65 Years and Over Living in Congregate Forms of Housing[a] Canada, 1981 and 1986

	Population Aged 65–74 Years	Population Aged 75 Years And Over
1981		
Persons living in congregate housing (000s)	52	155
Total population (000s)	1,478	883
Persons living in congregate housing as percent of total population	3.5	17.6
1986		
Persons living in congregate housing (000s)	58	183
Total population (000s)	1,650	1,047
Persons living in congregate housing as percent of total population	3.5	17.5

Source: Clayton Research Associates based on data from the 1981 and 1986 Census of Canada.

[a] Population not living in private households.

Opportunities in congregate housing for seniors are emerging for the housing industry either as builders/investors or as general contractors. As an illustration of these opportunities, CMHC's Toronto office reported in April 1987 that four new retirement home projects opened in its branch territory during the previous year and that three more projects would likely open the summer of 1987.[10] These projects typically consist of private or semi-private rooms of approximately 20 to 25 m^2 (215 to 270 square feet). Communal dining, recreation and social facilities are among the features of these projects.

Another option generating considerable interest but, as yet, little concrete action, are life-tenure leases—a means by which asset-rich seniors with limited current income can pay a lump sum in return for a guaranteed life occupancy with care, meals and access to emergency services.[11]

Greater Emphasis on Quality, Distinctiveness and Value in the New Homebuyers' Decision to Buy

The aging of the baby boom generation and the growth in the number of buyers who are empty nesters and seniors, in addition to changing lifestyle trends, suggests purchasers will become increasingly discriminating. The desire for personalization suggests a greater variety of designs and a demand for more customization by purchasers. Increasingly, value and quality will increasingly come to the forefront as more buyers are drawn from the middle-age and older household groups.

THE NEW HOUSING PRODUCT

Two aspects of potential changes in the characteristics of new single-family houses — average size and the so-called "smart house" — are considered here.

A Decline in Average Size of New Single-family Homes Likely in the 1990s

For many years, observers have been confronted by two apparently inconsistent trends—smaller average family sizes and an expansion in the average size of single-family houses.

Between 1976 and 1986, the size of the average family in Canada declined from 3.5 persons to 3.1 persons, a drop of 11 percent.[12] During the same decade, the average size of new single-family houses financed under the NHA climbed from 99 m^2 (1,065 square feet) to 113 m^2 (1,215 square feet), a rise of 14 percent.[13]

The trend to lifestyle housing likely will reduce the average size of single-family houses built during the 1990s. Skaburskis & Associates showed that nearly 85 percent of condominium buyers who were homeowners before lived in a single-family home, and two-thirds bought a condominium with a smaller floor area than their previous home.[14] Since many of the purchasers of lifestyle homes are expected to have owned a larger conventional home before purchase, this alone should cause the average size of new single-family homes to shrink.

The Intelligence of New Houses Will Increase

The computer revolution is going to be felt increasingly in new housing, not only in the way the house is constructed but also by enhancing the quality of life for its occupants. To this end, a major effort is the "smart house" being developed by the NAHB Research Foundation Inc., a subsidiary of the U.S. National Association of Home Builders.[15]

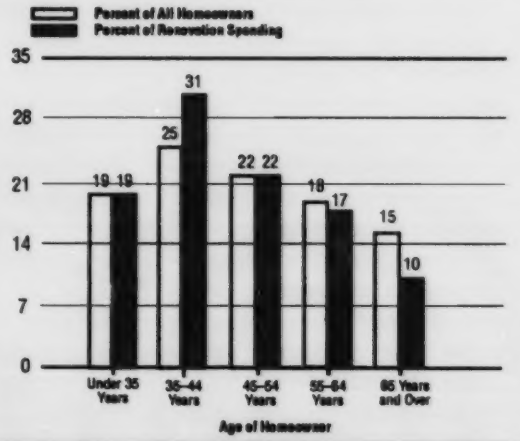
The smart house focuses on wiring. The design calls for a single cable to perform three functions: power distribution; control/data signal distribution; and audio or video signal distribution. The idea is that a single outlet will be used for lamps, hair dryers, security detectors and television and stereo speakers; its advantage is there can be interaction among appliances since everything goes through a central wiring system.

The goal of the smart house is to make new houses more comfortable, safer to live in, simpler to manage and less costly to maintain.

RENOVATION ACTIVITY

Renovation activity, broadly defined to include repairs, alterations, improvements, additions and conversions, has been the growth sector of housing output since the early 1970s. Total residential renovation spending expressed in constant 1986 dollars climbed by more than 50 percent between 1976 and 1986, from $8.6 billion to $13.3 billion. Renovation spending was almost as large as spending on new residential construction (excluding land) in 1986—$13.3 billion versus $14.5 billion.

FIGURE 12. DISTRIBUTION OF HOMEOWNER RENOVATION EXPENDITURES BY AGE OF HOMEOWNER, LARGE URBAN CENTRES, 1984



Source: Clayton Research Associates based on Statistics Canada FAMEX Survey.

Total Real Renovation Spending on Ownership Housing Will Likely Continue to Rise

Indicators of the future volume of residential renovation activity, as measured by constant dollar spending, give an ambiguous message. Data from Statistics Canada's 1984 Family Expenditure Survey show that average total renovation spending per homeowner living in large urban centres peaks for owners in the 35 to 44 age group.[16] (See Figure 12.) With the baby boom generation centred in this age cohort, it might be erroneously concluded that the golden era for homeowner renovation has been reached—as the baby boomer generation ages, real renovation spending might be expected to stabilize in the 1990s.

This is unlikely to be the case. Renovation spending per homeowner remains high for owners aged 45 to 54 and 55 to 64. Hence, while comparatively few homeowners in their late '40s and '50s traditionally have purchased a new home, they have continued to spend sizable amounts on renovation. This trend will increase likely as their real incomes rise.

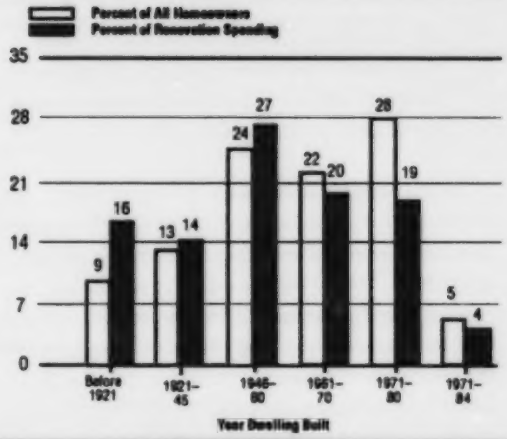
Moreover, the amount of spending is correlated positively with the age of the ownership housing stock. As the housing stock continues to age, per unit real renovation spending should increase. Finally, the growth of lifestyle housing for empty nesters and active seniors will mean that more move-up families and, to a lesser degree, families with young children will be moving into the existing housing stock previously owned by these purchasers. Many of these buyers are likely to undertake major renovations shortly after the purchase. (See Figure 13.)

Whether the volume of real renovation spending rises sufficiently to counter the decline in real spending for new construction is a matter of conjecture. Projections prepared by Clayton Research Associates for the Province of Ontario suggest this is the case for that province, but it may not be true for the entire country.[17]

Rise in Real Renovation Spending on Rental Housing May Be Inhibited by Rent Controls

Statistics Canada estimates indicate that landlords account for only a modest share of total residential renovation spending in Canada—only 13 percent in 1985. (See Table 16). This $1.6 billion in spending is low compared to estimates for the United States, even

FIGURE 13. DISTRIBUTION OF HOMEOWNER RENOVATION EXPENDITURES BY YEAR DWELLING BUILT LARGE URBAN CENTRES, 1984



Source: Clayton Research Associates based on Statistics Canada FAMEX Survey.

though rental accommodation accounts for nearly 40 percent of the housing stock in each country. In the U.S., renovations on renter-occupied dwellings are estimated to account for 37 percent of total residential renovation spending ($29.5 billion in U.S. dollars in 1985). Moreover, real renovation spending on renter-occupied housing in the United States has been increasing rapidly since the early 1980s, more than doubling between 1982 and 1986.

The extent to which rental renovation data for the two countries reflect statistical discrepancies or actual differences in activity levels is not clear. The U.S. numbers are based on a survey of landlords while the Statistics Canada numbers are based on building permit data, which are notoriously incomplete as a measure of renovation activity. For this reason, it is quite possible that the Canadian numbers are considerably understated.

TABLE 16. COMPARISON OF CANADIAN AND U.S. RESIDENTIAL RENOVATION EXPENDITURES BY TENURE 1985, BILLIONS OF DOLLARS

	Canada	United States	
Tenure	Can. $	U.S. $	Can. $
Owner-occupied	11.0	50.8	69.3
Renter-occupied	1.6	29.5	40.3
Total	12.6	80.3	109.6

Source: Clayton Research Associates based on data from Statistics Canada, Regis J. Sheehan & Associates and the Bank of Canada.

The increase in rental housing renovation activity in the 1980s in the U.S. has been linked to the growth in real rents:

> For more than a decade landlords deferred maintenance activities, but the sharp increases in rent levels now make investment in existing rental units profitable again.[18]

As the rental housing stock in Canada ages and becomes more obsolete, there will be a need for a significant increase in real spending on maintenance and upgrading.[19] However, the extent to which this increased spending arises will be determined, to a large extent, by the presence of rent controls through the 1990s, the provisions of these rent control schemes as they relate to rent increases allowable in older buildings and the rate of return permitted on renovation investments.

To the extent that rising real rents in existing buildings are a major determinant of the volume of renovation spending in the rental market, the prospects for significant private-sector renovation activity is limited in the seven provinces having province-wide controls because rents in older buildings are not likely to rise at a significantly higher rate than the inflation rate—the rent control provisions virtually guarantee this.[20] Without the prospect of increased profits, many landlords are likely to defer undertaking major renovation work.[21] In addition, government subsidies encouraging rental renovation work will unlikely be of a scale to cause substantial growth in this category of renovation spending.

CONSTRUCTION TECHNOLOGIES

Computer-based technologies potentially can produce a revolution in construction production processes. This section examines their potential in the single-family homebuilding and residential renovation industries over the 1986–2001 period. It also comments on the impacts of government initiatives to promote and give priority to technological research and eliminate or amend unnecessarily restrictive regulations.

No Major Technological Shake-up Arising From Computer-based Technologies

The innate characteristics of the single-family housing market, which have inhibited the widespread adoption of factory-type assembly techniques in Canada, are also likely to restrain the introduction of computer-aided manufacturing (CAM) in the homebuilding process. However, increasingly these techniques will be adopted by manufacturers of building products since they are more suited to manufacturing. They offer manufacturers the opportunity to achieve economies of scale while at the same time providing flexibility in product. This is especially important for the manufacturers of products that have to be uniquely designed and sized for the renovation market.

Computer-aided design (CAD) has much greater potential for widespread adoption by the homebuilding industry, especially larger builders specializing in lifestyle housing. CAD will allow these builders to respond more effectively and quickly to changing buyer demand and to allow buyers a greater degree of flexibility in choosing what they want in a house and its external appearance. However, CAD would appear to have a somewhat greater potential in the renovation sector than in new homebuilding.

Together with the growing use of personal computers for costing and scheduling work, computer-based technologies likely will gain increasing acceptance in the industry. However, as with most technological advancements over the postwar period, the changes likely will be evolutionary rather than revolutionary in nature during the 1986–2001 period. The impacts will be felt more in the areas of higher quality and greater consumer choice than in reduced costs for builders or renovators.

Government Initiatives Could Enhance Efficiencies

By funding and disseminating research results, government could accelerate the introduction of innovations in the new homebuilding and renovation sectors over the 1986–2001 period compared with the past decade or so. Any actions taken to make regulation more positive in application and that would reduce resulting unnecessary costs would be positive as well.

SUMMARY

The total demand for new housing is anticipated to decline during the 1990s from the level of the last half of the 1980s, though the extent of the decline will depend on future immigration levels and household headship rates. While demand is expected to continue to focus on ownership tenure, the housing forms demanded are

expected to experience a relative shift from conventional single-detached housing to lifestyle housing, where the housing unit is intergral to the overall development. Increasingly, purchasers will be drawn from non-traditional groups and will be discerning. The average house size likely will decline and the "intelligence" of new houses undoubtedly will increase.

Renovation activity on the existing housing stock is expected to continue to increase, though renovations by landlords may continue to be inhibited by rent controls in several provinces.

Computer-based technologies are expected to become more prevalent. However, the changes likely before the end of the 1990s are expected to be evolutionary and to reflect higher quality and greater consumer choice rather than in reduced costs for builders or renovators. Government efforts to accelerate the introduction of innovations in the housing industry and to make regulation more positive in application would benefit the housing market.

CHAPTER THREE
TECHNOLOGICAL CHANGES IN THE SINGLE-FAMILY HOUSING PRODUCTION PROCESS

Predicting technological change in the final product of the housing production process—the house—is complex. Predicting change in the production process is even more difficult: For example, forecasters in the 1930s, even more so in the 1940s and again in the 1950s and 1960s, predicted the imminent shift of the construction of single-family homes into the factory with the subsequent status as an efficient manufacturing industry.

However, these predictions proved incorrect. The more conservative forecasts of the 1930s and 1940s, which predicted the extent to which houses of the future would consist of factory-built components, were just being realized in the 1960s. Also, little advance in production processes has occurred in Canada since the 1960s. Certainly, the trend to factory-based housing has reversed.

In 1987, the single-family homebuilding industry in Canada is flexible and productive. Nevertheless, the industry's attempts to implement more integrated manufacturing with some scale of investment in plant and regional distribution have been largely abandoned. The industry's remaining venture into large-scale house manufacturing evolved outside the homebuilding industry *per se*. Atco Industries, formerly Alberta Trailer, became successful in the 1960s as a producer of industrial camp houses. The company now delivers these and other industrial and institutional housing to 65 countries around the world.[1] However, this example is not only atypical; it is almost completely unrelated to the present mainstream of Canadian housing construction.

Regardless, any forecast of technical changes in the housing production process may well begin with the assumption that the process will not remain as is.

BUILDING TECHNOLOGY IN SWEDEN, JAPAN AND THE U.S.

The production of housing, even that of wood frame single-family houses, is not the same throughout the world. An examination of the production process in other countries, notably Sweden, Japan and the United States, provides some insight into the technological potential of the Canadian homebuilding industry.

Sweden

Driven by the demands of urbanization, increasing construction costs and an increasing aversion to outdoor labour, particularly during the long winter season, the promotion of full industrialization of housing production was undertaken in Sweden in the mid-1960s through the combined efforts of business, labour and government.[2] Sweden now produces about 90 percent of its own single-family housing in factory-based systems.[3] It also exports to neighbouring countries, the Middle East, North Africa and on a limited scale to the United States. About 55 industrialized housing firms are in Sweden, of which 12 are large. Buyers are accustomed to receiving high quality and outstanding energy efficiency; many manufacturers also offer considerable design flexibility through the use of CAD and, sometimes, CAD/CAM techniques.[4]

Government in Sweden has interacted with business, labour and cooperatives in a variety of ways:

- Through assistance in the stabilization of demand, in an arrangement akin to a "large buyer" effect;
- Through an attempt to overcome the traditional craftsman approach of construction labour organizations by allowing workers to work on almost any task (electrical, plumbing, etc.) providing they have been trained;
- Through implementation of uniform performance-type codes and central technical acceptance mechanisms; and

- Through research that is production and quality oriented and undertaken by both the public and private sectors.[5]

Essentially, all single-family housing in Sweden is produced by the private sector.[6] Multi-year guarantees of components and workmanship are offered as a matter of course.[7] However, following two decades of high-volume production of quality housing, the demand for housing has been satisfied to a large degree. The Swedish industry's overcapacity is resulting in more intensive and effective efforts to export both production systems and housing packages.

Japan

Beginning more recently, Japan has stressed the industrialization of housing production rather intensively. Five large manufacturers, which each built between 12,000 and 400,000 units in 1983, dominate the factory-built housing sector. This sector of the housing industry has captured about 15 percent of the national single-detached housing market. More specifically, it has captured much of the prestigious upper-income market.

The attractions of factory-built housing are its high quality and the upper-income market's preoccupation with high technology. Certainly, cost savings are not realized: Traditional builders have reduced their costs to match those of the factory-built sector and often offer similar quality. The house manufacturers also export their systems, factories and knowledge, but not generally house packages, on a small scale to markets in China, Korea and Taiwan.

As in Sweden, the rationalization and implementation of codes and standards, the creation of technical acceptance agencies and the presence of non-union all-purpose assembly labour and training characterize the manufactured housing industry in Japan. However, these features are somewhat more controlled by the private sector in Japan than in Sweden. The house manufacturers produce their own materials, undertake R&D, provide 10-year warranties and even provide financing to homebuyers. They also have sales personnel throughout the country and sell through "home show parks," which include the homes of a number of different builders.

In contrast with the large industrialized builders, traditional house builders, who still construct the majority of houses, use somewhat similar methods to homebuilding methods used in Canada in the 1930s.

Wood frame techniques are used considerably in both factory-based and site-built houses in Japan, though factory-based housing also uses plywood stressed-skin systems. Japan's house manufacturers also produce lightweight steel systems, PALC (precastable autoclaved lightweight ceramic) systems and other material combinations.

Japan's house manufacturing sector appears to be growing because of the upper-income market's emphasis on quality and technology (including CAD design "personalization"), and not through subsidization. Conversely, traditional homebuilders are subsidized still despite the Japanese government's desire to shift labour from such relatively non-productive pursuits.[8]

United States

Despite the constraints of varying local building codes and jurisdictions, which are less rationalized or consolidated than in Canada, the U.S. housing industry has evolved a small number of commensurately larger regional companies than exist in Canada and produces more of its new single-family housing in factory-based systems. Some confusion exists about the market share of factory-built housing in the United States. Recent estimates suggest that between 20 and 50 percent of new single-family housing can be classified as factory-built when mobile homes are included.[9]

The U.S. house manufacturing sector focuses on the lower end of the market, using rudimentary plants and a large component of unskilled labour. Quality control is considered a major problem for these manufacturers.

In a recent study, the U.S. Office of Technology Assesment postulated that varied building codes and wide swings in demand have caused the absence of a more technologically advanced housing manufacturing industry in that country. The report warns of increasing imports of factory systems or house packages from Sweden, Japan and Canada. To ensure the health of the domestic industry and success in exporting, the report calls for more public-sector involvement in R&D, reducing excessive changes in demand, building code rationalization, third-party inspections, quality labelling,

energy labelling and assembly-labour classification. The report also suggests that higher technology building systems, including advanced kitchen and bath "core" units, control centres and appliances, combined with attractive package financing, should be pursued.

TECHNOLOGICAL CHANGE IN THE PRODUCTION PROCESS OF SINGLE-FAMILY HOUSING

This section presents observations about possible technological changes in the production process of single-family houses that could arise before the end of the century. Various assumptions upon which the projected changes are made are also presented.

The Assumptions

Before predicting areas of technical change, certain assumptions must be made. These assumptions are as follows:

- Labour supply will tighten through the 1990s. On-site construction labour may be in shorter supply than labour in general owing to growing dissatisfaction with working in adverse weather conditions and the greater cyclical variations in residential construction activity;

- Governments will not introduce measures favouring on-site work over factory-built residential construction, more likely making modest moves in the opposite direction;

- Despite the fragmented nature of the overall demand for new single-family housing, few large urban centres will continue to account for a disproportionate share of demand;

- Consumer insistence on quality and longer-term comprehensive warranties for single-family homes will strengthen;

- Large builders will experience a moderate increase in their share of the overall single-family house market; and

- Free or relatively freer trade will become part of the North American scene during the 1990s.

Predicted Changes

Given these assumptions, the following technological advances may occur in the production process of single-family houses:

- The housing production process likely will become more of a factory or factory-based process.

The market penetration of factory-built components is expected to continue to increase to the end of the century. As well, the market penetration of factory-built housing could gradually increase.

- In wall and roof claddings, wood composite products are anticipated to compete more strongly with metals and asphalt roofings.

Stamped metals and thermoplastics likely will begin to compete strongly. Light insulating precast concretes will become the "prestige" cladding. Regardless of the material, manufacturers will attempt, as always, to have these products resemble shakes, tiles, clapboard or random stonework.

- The market penetration of wood basements is expected to increase.

Basements constructed of treated wood-composite panels increasingly will compete with those of lightweight precast concrete systems, offering a dry, mould-free living space.

- Framing, and entire stressed-skin panel assemblies, are expected to be produced increasingly in wood-composite sections.

"Reconstituted wood" in efficient I shapes and other webbed geometries are expected to compete with and supplant studs, joists and even floor and roof trusses.[10] Using much less wood and smaller "weed trees," wood-composites can offer generous depth to accommodate insulation and services. The market area for Canadian producers of wood-composite products will include much of North America.

- House systems will allow the inclusion of smart house circuitry.

In a smart house, one wiring circuit recognizes and serves all AC and DC electrical appliances and devices,

television and telephone signals, alarm systems and intercom systems through microchip switches on each device. The circuitry is completely fire- and child-safe. Central computer control of heating, air conditioning and phone-in signalling of appliances is accepted readily.

- Changes in the production process will vary according to house price.

Upper-priced houses are expected to be based increasingly on wood-composites in competing systems such as completely precut systems, pre-engineered shell framing package systems, large panel packages or room-size box modules akin to those currently being produced in Japan.

In the upper end of the market, precast ultralight concretes likely will compete with wood-composites in a range of system forms. At the least, ultralight concretes can provide an overall decorative insulating veneer that may supplant brick veneer (the precursor may be the PALC material currently in use in Japan).

Kitchens will continue to be assembled much the same as now but are more likely to include a computer-based control centre and smart appliances in the package. In all price ranges, bathrooms increasingly will feature plastic bath-shower-vanity units or sub-units designed for flexibility in placement and appearance. Plastic piping also will dominate all markets.

In the low- to moderate-price markets, the wood-composite superstructure will evolve in much the same manner as in the upper end of the market. The more factory-built housing will largely be comprised of large box module forms.

- Heating, ventilating and cooling systems are expected to use heat pump heat recovery technology, which recovers heat from exhaust air.

Depending on ongoing energy economics, including existing investment in distribution infrastructure, such technology may evolve to the advanced heat pump form using natural gas combustion.

- Interior claddings likely will continue to be dominated by inexpensive, fire-safe gypsum drywall, but with one-pass resilient jointing/finishing.

- Materials and components are expected to be shipped across Canada, and wood-composite products and components will be shipped increasingly to the United States. These latter products have the potential to greatly expand Canadian exports of building products to the U.S. before the end of the 1990s.

CHAPTER FOUR
CHANGES IN THE STRUCTURE OF THE HOUSING INDUSTRY

The housing industry will continue to be subjected to numerous changes in its external and technological environment. While some of these may favour larger firms and others may be more beneficial to smaller firms, the number of builders of new housing will decline over the 1986–2001 period. Conversely, the *prima facie* evidence suggests the number of housing firms specializing in residential renovation likely will rise, though this depends on the extent to which work is done by renovators *per se* (firms doing renovations involving more than one trade) or special trade contractors (who are not classified as renovators in this study).

A series of predictions on future trends in the structure of the housing industry are presented here, with the primary focus on the single-family homebuilding and renovation sectors of the industry. While in some ways these predictions are conjectures, they are based on a consideration of the expected external forces at work, the anticipated changes in the production process and the innate characteristics of the housing market.

SINGLE-FAMILY HOMEBUILDING INDUSTRY

Changes in the structure of the single-family homebuilding industry will depend on external events that affect the housing market, including technological changes, as well as the inherent nature of the housing market. The implications of these expected external abilities and technological environment for single-family builders are considered before discussing their impacts on the structure of the industry.

Conflicting Forces Impinging on Single-family Homebuilders

The only certainty facing single-family homebuilders is that the total demand for their product will decline in the 1990s. Beyond this, conflicting forces are at work that will affect new single-family homebuilders, and there is considerable conjecture as to what the net consequences will be.

However, current trends in the supermarket industry illustrate there can still be market opportunities in a stagnant or declining marketplace. Supermarket sales had been essentially flat for a number of years by the mid-1980s, primarily because of the rapid growth in eating at restaurants and the growth of speciality food stores. However, astute market observers detected an opportunity for an alternative to the conventional supermarket—the superstore. The superstore was an immediate success with its proponents prospering while many operators of conventional supermarkets fought vainly to survive. Similar types of opportunities will arise in the future for the single-family homebuilding industry.

- Market demand is becoming increasingly fragmented.

The nature of the homebuying public is becoming more diverse. The traditional breakdown of household composition—the family life cycle framework—excludes an increasing proportion of the country's population. Increasingly, the single-family builder will be challenged to provide suitable and affordable housing for lone-parent families, childless couples and middle-aged and older singles. The challenge arises because many households in these groups have limited incomes and the resale market, as well as apartment developers, may often have a much better opportunity of tapping this demand. However, opportunities will still exist for single-family builders with the business acumen to extend their product beyond the conventional starter and move-up buyer home.

To an even greater degree, the demand for new housing is fragmented by the varying lifestyle preferences of the population. People can no longer be easily compartmentalized. Couples with small children do not all necessarily seek the same housing product: Their choice will depend on the labour market participation and career aspirations of both spouses, their educational backgrounds, their approaches for bringing up and educating their children and the importance of housing

in their preference structure, among other things. In addition, prospective buyers with broadly similar household characteristics and lifestyles will be pressing for a greater variety of designs and customization in a desire to personalize their homes.

Other things being equal, fragmentation of demand should favour smaller builders, particularly those constructing only a few homes per year, for two reasons. The smaller builder deals directly with buyers on a day-to-day basis and therefore should have an up-to-date understanding of their housing desires. The smaller builder is also often in a better position to respond to changes in plans requested by buyers and to reposition product lines quickly to changing buyer demands. But not all small builders will grasp these opportunities, particularly those who do not have a long-term commitment to the industry.

However, for an increasing number of buyers, lifestyle preferences encompass much more than just the housing structure itself. The ambience and amenities offered by the community (subdivision) in which the house is situated increasingly will become important factors in the house-buying decision. Larger builders and integrated builders/developers are in a better position to provide a package that includes the house, community amenities and ambience. Even if land developers respond to the growing desire for "lifestyle" living environments by providing the community infrastructure and allowing builders to build the homes, they are likely to employ medium-sized builders (that is, builders constructing between 25 to 99 homes per year). The problems arising from dealing with a larger number of small builders likely preclude active partnerships between developers and small builders.

- Computer-based technologies favour larger builders.

Computer-based technologies will penetrate the single-family homebuilding industry. The increased use of computers to manage housing design and construction will enable larger builders to respond more readily to the personalized demands of their buyers (large builders are firms constructing 100 or more homes per year). Moreover, the expected trend to more factory and factory-based components will give larger builders the opportunity to provide a higher-quality finished house.

- The characteristics of the housing market will continue to constrain the growth of larger builders.

The Canadian housing market has a number of features inhibiting the emergence of super building firms and favouring smaller firms. These features include a demand geographically dispersed (though relatively few urban centres account for a disproportionate share of demand), a site-specific product combined with high costs of transportation, differing local regulations and ease of entry.

To the end of the century, some progress could be made to more uniformity in municipal regulation of the building and land development processes. Entry into the industry could become more difficult in provinces where builders must be registered with a provincial warranty program (this was the situation in Ontario and Quebec in mid-1987) if warranty programs introduce more stringent requirements on their members in an effort to enhance the quality of the end product. However, these changes likely will not be sufficient to result in significant changes in the structure of the single-family homebuilding industry.

Significant Changes Foreseen in the Structure of the Single-family Homebuilding Industry

Changing external and technological environments suggest a number of potential changes that may occur in the structure of the single-family homebuilding industry.

- A large cadre of small builders will continue to exist.

The number of small builders (those constructing fewer than 25 houses per year) is expected to decline considerably over the 1986–2001 period. However, a large number of small builders will be in existence at the turn of the century as there will always be opportunities for the small builder in small centres and rural areas and, especially, in building highly individualized custom homes.

- There will be an increasing market share for large builders.

Large builders (those constructing 100 or more houses per year) are expected to capture a gradually growing share of the single-family housing market during the last 15 years of the century. The introduction of computer-based technology likely will stimulate the market penetration of larger firms.

Since the potential profits arising from producing lifestyle housing will be greater from the development of the land than the construction of the housing, more and more larger builders will enter the land development business. Only large firms are likely to have the financial resources to purchase, plan and service land and construct the community amenities required for the creation of lifestyle living environments.

- Many medium-sized builders will become more like general contractors.

In the future, the typical medium-sized builder (firms building between 25 and 99 houses per year) will differ significantly from the typical firm in the mid-1980s. A recent long-range planning report released by the National Association of Home Builders in the United States concluded medium-sized builders in that country face an uncertain future.[1]

With the growing popularity of lifestyle housing, the land developer who is not a builder and developer will assume ever-increasing responsibilities for the planning and development of the community as a whole, including internal and external design, project pricing, marketing and even the sale of the housing units.

These firms will permit a limited number of builders to build in their community but under strict guidelines. It will not be strictly a general contractor/client relationship, but it will become increasingly close to this.

- Other medium-sized builders will specialize in particular market niches.

The fact that the market is becoming increasingly fragmented and is geographically dispersed offers opportunities for medium-sized builders to specialize in a particular segment of the market in a single medium-sized or larger urban market area. This speciality could be single-family housing (for example, the low-density retirement village) or in other housing forms, such as apartment projects or congregate types of housing (for example, retirement homes).

These builders will tend to have an advantage over larger builders by knowing their narrowly focused marketplace in detail. They will be receptive to new ideas, including computer-based technologies.

RESIDENTIAL RENOVATION INDUSTRY

The future of the residential renovation industry will also depend on changes in its external and technological environments and the characteristics of its marketplace.

Characteristics of the Renovation Market Inhibits Change

Unlike the expected market for the single-family homebuilding industry, the volume of renovation activity will continue to grow over the 1986–2001 period. Moreover, the share of total activity undertaken by renovators could increase at the expense of do-it-yourselfers and, possibly, special trade contractors.

However, the following four aspects of the renovation marketplace are expected to inhibit fundamental change in the renovation industry:

- Demand will remain extremely fragmented.

The extent of fragmentation in the demand for the services of renovators is much greater than the current or future fragmentation in the demand for new single-family homes. This fragmentation certainly will not disappear over the projection period.

- Municipal building restrictions are expected to ease only slightly.

A significant problem for the renovation industry is the failure of present building codes and land use regulations to recognize the unique nature of renovation in contrast with new residential development. With continued pressure from senior governments and the industry, gradual improvement is expected to be made in the regulatory environment of renovators.

- The achievement of significant economies of scale is not likely to occur.

The fragmented nature of demand, the uncertain parameters for many renovation jobs (for example, not knowing what is involved in making structural changes to an existing home) and the close rapport required between the renovator and the client will continue to restrain the potential for diversified renovation firms to achieve lower per unit costs through larger scales of

operation. However, greater opportunity will exist for some economies of scale for firms specializing in a particular segment of renovation business (for example, kitchen or bathroom renovations). In addition, firms will continue to enter the industry easily owing to the minimal upfront capital requirements and the lack of other significant barriers to entry.

- An adequate supply of skilled labour will likely be a continuing problem.

Many types of renovation work require the input of highly skilled personnel, especially craftsmen. With the emphasis on quality by the aging baby boom generation, the need for highly skilled and caring labour will continue to grow. Owing to the labour-intensive nature of renovation work, any tightening in the overall labour supply is likely to affect this industry more than many others. Management skills will also tend to lag behind the renovation industry because of the predominance of small firms.

Changes in the Structure of the Renovation Industry Will Be Evolutionary

The extent of change in the residential renovation industry over the 1986–2001 period is expected to be less than for the single-family homebuilding industry.

- Small firms will continue to dominate.

The renovation market over the 1986–2001 period will continue to attract small firms, many with only one or two persons on staff. The fragmented nature of demand and numerous renovation jobs that are small in size assure a continued role for the small renovator.

- Larger "boutique" renovators will increase in number.

While the scope of renovation work is highly diverse, a commonality exists among certain types of work. Bathroom renovations, kitchen renovations, room additions, creating basement apartments and extensive landscaping improvements are types of renovations in which firms can specialize, gain in-depth experience and generate economies of scale. These specialized renovators, referred to as "boutique" renovators, will emerge increasingly in larger urban markets where the volume of work is high enough to justify specialization.

A number of franchisors of "boutique" renovators may emerge. Franchisors will have the marketing skills to entice people to undertake certain types of renovation work, as well as enhance the credibility of the franchisees. Given the personalized nature of the market, chains of "boutique" renovators in which each outlet has common ownership are less likely to emerge in the larger markets across the country.

These larger "boutique" renovators will be of sufficient size to qualify for quantity discounts from suppliers. They are also likely to enhance their operating efficiency by adopting computer-based technology for determining customer requirements, cost estimating and scheduling.

- There will be less prospect of larger "department store" renovators emerging.

Renovation firms can increase in size by specializing in particular types of jobs and gaining a larger market share or by endeavouring to undertake a wide range of renovation activity. Many existing renovators are in a sense "jacks of all trades" — whatever the customer wants, they can do it. These firms are referred to as "department store" renovators.

There is a market niche for firms of this type. For instance, owners buying an older inner-city home may want the entire inside of the house gutted and redone. However, it is difficult for such firms to become large-scale operators. Personalized contact between the renovator and the client is a key facet of this type of operation.

Once their reputations have been established, there will be less opportunity for franchising of the "department store" renovator firms since they have little need for incurring the costs involved in belonging to a franchise organization. Word-of-mouth is the most important source of business for these firms.

LAND AND APARTMENT DEVELOPERS

The role of larger firms is expected to increase in both the residential land and apartment development industries during the 1986–2001 period. The relative shift in the marketplace to lifestyle housing not only implies more larger-scale projects but also more upfront and ongoing capital requirements to develop these lifestyle projects. Both imply a shift to larger-sized firms.

The growing popularity of lifestyle communities is expected to result in land developers assuming increasing responsibilities for the planning and development of the community as a whole. This includes the internal and external design, project pricing, marketing and, often, the sales of housing units.

The market opportunities for apartment developers increasingly will arise from lifestyle living environments, mainly condominium tenure, but some rental opportunities also will arise. These projects will more likely be undertaken by large firms.

CHAPTER FIVE
CONCLUSIONS

The external environment will be increasingly negative for new housing demand during the 1990s. However, opportunities, and profitable ones, will exist for firms cognizant of the changing marketplace and astute enough to take advantage of emerging opportunities.

The experience of the first half of the 1980s illustrates this hypothesis. The decline in the average annual demand for new housing in the late 1990s compared to the late 1980s is expected, at worst, to be no greater than the decline occurring between the last half of the 1970s and the first half of the 1980s. Yet many homebuilding and land development firms were prospering in the mid-1980s. A significant number were recent arrivals to the housing industry with some of the most successful firms being established in the early 1980s when economic conditions were depressed.

A number of other predictions are as follows:

- On the whole, sharply higher immigration would increase significantly the anticipated level of demand for new housing.

The new housing industry thrives on growth. With domestic demographic factors being negative over the 1986–2001 period, higher immigration offers an alternative source of population growth and accompanying housing demand. However, it is unlikely that the level of immigration will rise sufficiently to offset fully the declining demand for new housing from domestic sources; the annual number of immigrants would have to more than triple the 1986 level of immigration throughout the 1990s.[1]

Whether a marked rise in the level of immigration occurs over the 1986–2001 period will depend on the willingness and ability of groups such as the housing industry to mobilize public opinion and federal politicians in support of higher immigration.

- The increasingly segmented marketplace will offer considerable opportunities to the astute builder.

Housing firms, whether single-family builders or land or apartment developers, that are attuned to the lifestyle desires and financial resources of discrete groups of prospective buyers and build accordingly will achieve success during the 1986–2001 period. Lifestyle is a word that is used universally but seldom defined. The emergence of lifestyle housing means builders will have to understand their clientele well—how they think, what motivates them, what they want out of life and where housing fits into their way of life. In-depth knowledge of buyer preference will become a prerequisite for market success.

- Successful builders will be receptive to new technologies, including computer-based technology.

The housing industry has recently begun to feel the effects of new computer-based technologies. These technologies will enable builders to become more efficient internally, respond more readily to the diverse wishes of their buyers and become more efficient in their production processes. Also, manufacturers will be offering builders a range of new factory-built components that will reduce production costs and, probably more importantly, raise quality levels. The astute builder will grasp these new technologies early.

- The structure of the single-family homebuilding industry will change.

It is projected that a substantial number of builders will leave the single-family homebuilding industry over the 1986–2001 period. Also expected is that larger firms will gradually increase their share of the market and that medium-sized builders increasingly will become "boutique" builders specializing in a particular lifestyle segment or quasi-general contractors.

- Residential renovation will be a growth segment of the housing industry.

In contrast to the demand for new housing, the volume of residential renovation activity is expected to increase over the 1986–2001 period. There will be opportunities for small, and even medium-sized, single-family builders to diversify or move exclusively into an alternative area of activity closely related to their current activities. The transition may not be easy but is likely to be rewarding for many firms making the shift.

- Changes in the structure of the residential renovation industry will tend to be more evolutionary.

Small firms will continue to dominate this industry. However, the growth segment is likely to be larger boutique renovation firms specializing in one facet of renovation work (for example, kitchen or bathroom renovations). The growth of large "department store" renovation firms is less likely than for the boutique renovators and is more speculative. Smaller firms will remain the mainstay of major renovation projects involving extensive changes to the entire house.

- Typical residential land and apartment developers will increase in size.

The relative shift in demand to lifestyle living environments and the concomitant capital requirements suggests an increase in the role of larger firms in both the land and apartment development sectors of the housing industry.

- The regulatory environment could obstruct emerging market opportunities.

Planned lifestyle living environments are currently being developed and are epitomized by the high-rise luxury condominium project. The high-rise condominium has been readily accommodated by municipalities because, in physical or land use terms, it is essentially no different than a high-rise rental apartment project. Little, if any, adjustment in the regulatory environment was necessary for the transition from rental to condominium tenure.

For low-rise communities catering to the demand for lifestyle housing, the transition is unlikely to be smooth. The planning parameters for lifestyle living environments are not the same as for conventional subdivisions. Moreover, conventional subdivisions are based on a divided responsibility: The developer and builder provide the house and lot, and the municipality provides the essential amenities, including roads, streetlights, sewer and water, fire and police protection, parks and recreation facilities. By their nature, lifestyle communities likely are considerably less dependent on the municipality. Many will have condominium or homeowner associations to maintain internal streets, lighting, sidewalks and landscaped boulevards. They may have their own on-site security for routine security matters. They are also likely to have their own recreational facilities and services.

Moreover, should the municipality be willing to provide most of the services and amenities, a fundamental difference may exist in many instances between the quality of services demanded by residents of lifestyle communities and the level of services provided by a municipality to all its residents. A close relationship between the developer and the municipality will be required to determine the service requirements of lifestyle communities (they will differ widely by target group), the division of responsibility and appropriate cost sharing.

For the renovation sector, it is crucial that municipal governments become more responsive to the unique needs of renovation work and that a regulatory stance be formulated with the goal of promoting renovation work while, at the same time, also recognizing the need to protect the public interest.

NOTES
WORKING PAPER FIVE

INTRODUCTION

1. Past experience with longer-term projections indicate they are prone to a number of problems, including: being subject to substantial margins of error; being overly influenced by the experience of the two or three years immediately preceding preparation; and not being successful at identifying future breaks in trends. Notwithstanding these failings, "long-term projections are still of use. ... Even though the future is inherently unknowable, it is important to take advantage of the best information available in order to make plans." John Sargent, *Long-term Economic Prospects for Canada: A Symposium, Royal Commission on the Economic Union and Development Prospects for Canada* (Toronto: University of Toronto Press, 1986), p. 3.

2. Since resources for this working paper were finite, the alternative would have been a less detailed examination of a larger number of topics or geographic areas.

CHAPTER ONE

1. The sources for this economic review include the following: John Sargent, *Long-term Economic Prospects for Canada: A Symposium, Royal Commission on the Economic Union and Development Prospects for Canada* (Toronto: University of Toronto Press, 1986); Data Resources of Canada, "The Shape of Things to Come," *Canadian Review Pre-print* (Spring 1987); Ontario Hydro Economics and Forecasts Division, *Long-term Economic Outlook Annual Review* (September 1986); Economic Council of Canada, *Changing Times: Twenty-Third Annual Review* (Ottawa: ECC, 1986); and Informetrica Limited, *Monthly Economic Review* (April 1987).

2. Transfer payments from government to individuals include Canada Pension Plan payments, family allowance benefits, unemployment insurance payments and social assistance.

3. This implicitly assumes that income taxes as a proportion of personal income do not increase over the 1986–2001 period.

4. These immigration figures refer to the gross migration of legal immigrants to Canada and do not consider Canadian residents emigrating to other countries. The difference between total immigration and total emigration is referred to as net immigration.

5. The real mortgage interest rate is approximated here by the difference between the annual average monthly interest rate for five-year term mortgages and the annual change in the Consumer Price Index. The theoretically correct measure of real interest rates is the gap between current nominal rates and expected inflation.

6. Peter Dungan suggests that the longer-term full employment-unemployment rate may be six to seven percent but admits it is an area about which little is known. See Peter Dungan, "Macro Projections to 2000: Perspective III" in Sargent, *op. cit.*, p. 68.

7. Jean Dumas, *Report on the Demographic Situation in Canada 1986* (Ottawa: Statistics Canada, Catalogue 91–209E, 1987), p. 51.

8. *Ibid.*, p. 47.

9. Employment and Immigration Canada, *Annual Report to Parliament on Future Immigration Levels, 1986* (Ottawa: 1986), pp. i–ii.

10. A discrepancy exists between net immigration during the 1981–86 period calculated, residually based on Census of Canada population growth estimates and data on births and deaths, which show average net immigration of 3,000 persons per year, and other Statistics Canada estimates based on annual data provided by Employment and Immigration Canada, which indicate net immigration of 52,000 persons per year. Statistics Canada is currently investigating this discrepancy. It appears the difference is either attributable to an undercounting of total population in the 1986 Census or an underestimation of the number of emigrants.

11. There is also the possibility that population growth during the 1981–86 period is understated or that emigration was larger than current estimates indicate.

12. This higher population projection understates natural increase to the extent that additional immigrants under the high projection have children after arriving in Canada. However, these children would not have a significant impact on overall housing demand over the projection period, as they will not have reached the household-forming age groups by the year 2001.

13. The baby boom generation refers to people born during the 1940–60 period when the total fertility rate climbed from 2.7 births per woman in 1939 to 3.9 births per woman in 1959 and 1960.

14. The baby bust generation refers to people born after 1960 when the total fertility rate declined from 3.9 births per woman in 1960 to 1.7 births per woman in 1980 (at which it has since stabilized).

15. When vacancy rates are low and housing costs are high, fewer people are likely to establish their own household (for example, more young adults might remain with their parents). This would increase average family size and reduce the number of one-person households.

16. The number of persons aged 20 to 24 (the prime age group for marriage) declined by more than 90,000 persons between 1981 and 1986.

17. Dumas, *op. cit.*, p. 25.

18. Statistics Canada, *Births and Deaths* (Ottawa: Statistics Canada, Catalogue 84–204, 1985), Table 11.

19. A. Romaniuc, *Fertility in Canada: From Baby-boom to Baby-bust* (Ottawa: Statistics Canada, Catalogue 91–524E, 1984), pp. 34–35.

20. The increases in headship rates over the 1986–2001 period reflect the improvement in economic conditions since the recession and the expectation of moderate real income growth over this period.

21. Calculated by Clayton Research Associates Ltd. from Statistics Canada, *Household Facilities by Income and Other Characteristics* (Ottawa: Statistics Canada, Catalogue 13–218, various years), Table 6.

22. William L. Wilkie, *Consumer Behavior* (Toronto: John Wiley & Sons, 1986), pp. 193–198.

23. *Ibid.*, p. 282.

24. The housing industry is interested in what households want ***and*** are willing to pay for. This is no different than the producers of other goods and services in a market economy (often referred to as effective demand). The focus of private housing firms is quite different than that of government housing policy-makers. The focus of government is more on housing requirements — households living in inadequate accommodation or paying too much for accommodation on the private market.

25. Wilkie describes an eight-stage framework. See Wilkie, *op. cit.*, pp. 194–196.

26. Wilkie, *op. cit.*, pp. 281–283.

27. Changing lifestyles when all other factors (that is, marital status, income) remain unchanged is what Peter Drucker refers to as changes in perception. See *Working Paper Four*, p. 7.

28. Based on a review of CMHC, *A National Direction for Housing Solutions* (undated) and Honourable Stewart McInnes, *Remarks to the Canadian Home Builders' Association 44th National Conference/Exposition*, Halifax, February 16, 1987.

29. Honourable Bill McKnight, statement issued in conjunction with CMHC, *A National Direction for Housing Solutions* (undated), p. 4.

30. Ontario Ministry of Housing, *Your Guide to Ontario's Housing Programs* (undated), p. 20.

31. Based in large part on Economic Council of Canada, *Innovation and Jobs in Canada* (Ottawa: ECC, 1987), Chapter Six.

CHAPTER TWO

1. For the most part, the existing housing stock provides lower-cost housing than new housing. As existing households become more affluent, they move to new higher-quality (and higher-priced) accommodation, making older units available to newly formed, less affluent households.

2. Mobile homes are not included in CMHC's housing starts and completions statistics unless the units are placed on permanent foundations (most are not).

3. This was calculated by comparing new supply (new housing completions plus shipments of new mobile homes) to Census data on growth in households. Although changes in the stock of vacant dwellings are also a factor, the available data on vacant units other than those in rental structures of six or more units are inadequate to allow a comprehensive analysis.

4. A sizable proportion of people aged 75 or older do not maintain their own households. In 1986, nearly 30 percent of the population in this age group lived with relatives or in special care institutions, such as nursing homes.

5. Data from the 1981 Census are used here for illustrative purposes. Comparable data from the 1986 Census are not yet available.

6. A. Skaburskis & Associates, *National Condominium Market Study, Working Paper 7* (CMHC, 1984), Tables 3.4 and 3.8B. This study surveyed over 1,200 condominium owners living in nine cities from Halifax to Vancouver.

7. Lorraine Romank, *Ownership Retirement Housing Projects in Alberta* (Edmonton: Alberta Municipal Affairs, 1987).

8. Carol Vogel, "Clustered for Leisure: The Changing Home," *The New York Times Magazine*, June 28, 1987, p. 14.

9. Gordon E. Priest, *Living Arrangements of Canada's Elderly: Changing Demographic and Economic Factors* (Vancouver: Gerontology Research Centre, Simon Fraser University, 1985), p. 35.

10. CMHC, Toronto Branch, *Local Housing Market Report*, April 1987, p. 6.

11. This option was mentioned by the Honourable Stewart McInnes in *Remarks to the Canadian Home Builders' Association 44th National Conference/Exposition*, Halifax, February 16, 1987, pp. 24–26.

12. Statistics Canada, *The Daily* (Ottawa: Statistics Canada, Catalogue 11–001E, July 9, 1987), p. 9.

13. CMHC, *Canadian Housing Statistics, 1986* (Ottawa: CMHC, 1987), Table 84.

14. Skaburskis, *op. cit.*, Table 5.3.

15. This description is based on an article by John Fennell entitled "Intelligent Home Now Under Way," *Canadian Building*, March 1986, pp. 38–39.

16. The 1984 Family Expenditure Survey covered homeowners in the following major urban centres in Canada: St. John's, Charlottetown-Summerside, Halifax, Saint John, Quebec, Montreal, Ottawa, Toronto, Thunder Bay, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver and Victoria. Average renovation spending per homeowner was highest in the 35 to 44 age group ($2,362); average spending for other age groups were as follows: under 35 — $1,856; 45–54 — $1,882; 55–64 — $1,776; 65 and over — $1,316.

17. Clayton Research Associates Ltd., *The Nature of the Residential Renovation Market in Ontario*, prepared for the Ontario Ministry of Housing, February 1987, p. 9.

18. The Joint Center for Housing Studies of MIT and Harvard University, "Housing Rehab Expenditures Continue Upward Trend," *Joint Center Review*, June 1987, p. 3.

19. The rehabilitation needs of the existing rental stock is discussed in Clayton Research Associates Ltd., *Causes and Consequences of Condominium Conversions: A Policy Framework for the City of Toronto*, prepared for Clarkson Gordon Inc., April 1986, pp. 29–31.

20. Only British Columbia, Alberta and New Brunswick do not urrently have rent controls. However, the prospects for significant private-sector rental renovation activity is limited in these three provinces as well, since real rents have not been rising during recent years in these provinces.

21. CMHC has also identified rent controls as a factor that may reduce landlords' incentive to maintain or rehabilitate their projects. See CMHC, *A Consultation Paper on Housing Renovation*, 1987, p. 12.

CHAPTER THREE

1. *Report on Business Magazine*, November 1986.

2. Scanada Consultants Ltd., *Industrialized Housing Production: Potential Gains Through High-volume Programming*, prepared for CMHC, October 1970 and Government of Sweden, Housing, Planning and Building in Sweden, prepared for the ECE Study Tour in Sweden, 1974.

3. Congress of the United States, Office of Technology Assessment, *Technology, Trade and the U.S. Residential Construction Industry* (Washington: 1986), pp. 45–46.

4. Bairstow and Associates Consulting Ltd., *Opportunities for Manufactured Housing in Canada*, prepared for CMHC, November 1985.

5. Scanada Consultants, *op. cit.*

6. Government of Sweden, *op. cit.*

7. Congress of the United States, *op. cit.*, p. 45.

8. Scanada Consultants Ltd., *Japan's Advancing House Manufacturers: A Lesson for Canada's Industry?*, prepared for the Department of Regional Industrial Expansion, March 1985.

9. Congress of the United States, *op. cit.*, pp. 12–13. If the production of mobile homes is excluded, the market share for factory-based housing declines to between 15 and 35 percent.

10. Scanada Consultants Ltd., *Wood Composite Products Evolution, Major Demands and Opportunities*, prepared for Environment Canada Forestry Service (information report DPC–X–3), 1974.

CHAPTER FOUR

1. National Association of Home Builders, *Housing America — The Challenges Ahead* (Washington: NAHB, 1985), pp. 110–112.

CHAPTER FIVE

1. The consequences of a high level of immigration are not necessarily all positive. To the extent higher immigration causes unemployment among Canadians or immigrants who do not aggressively seek to improve their lot through hard work and job training, there would be offsetting economic and social costs.